

Survey Questions - Post-Focus Group Session Survey

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0690-0030. Without this approval, we could not conduct this post-focus group survey collection. Public reporting for this information collection is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Nurture Nature Center at: 518 Northampton Street, Easton, PA 18042, Attn: Rachel Hogan Carr, Executive Director, rhogan@nurturenature.org.

1. Please rate your agreement with the following statements about the forum.

Please check ONE box for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The information was clearly presented.	✓				
I felt comfortable voicing my opinion.	✓				
I know more about the National Weather Service (NWS) resources.	✓		✓		
I feel I could use NWS resources to judge my risk in an extreme weather event.	✓		✓		

2. What are the biggest barriers you face in using NWS flood forecast and warning products? Some examples to consider are lack of computer or phone, lack of internet access, language barriers, NWS products too difficult to understand, or other factors.

More localized cell phone Alerts.

3. Our goal today was to gather feedback to improve NWS flood forecast and warning tools. Beyond the questions asked today, what else would be important to know about how you gather/would use NWS information about extreme weather risks and your intended actions?

Frequent broadcasting on News/weekly/radio etc

4. After attending today's session, how likely are you to:

Please check ONE box for each statement.

	Very Likely	Somewhat Likely	Neither likely nor unlikely	Somewhat Unlikely	Unlikely
Create or revise plans to deal with extreme weather events using NWS products.	✓				
Share what I learned about NWS products today with others.	✓				
Seek NWS information about extreme weather risks.	✓				
Use NWS products and information in your decision-making	✓				

5. Do you prefer text-based or graphical/visual NWS products in trying to understand your level of risk from flooding? Circle one.

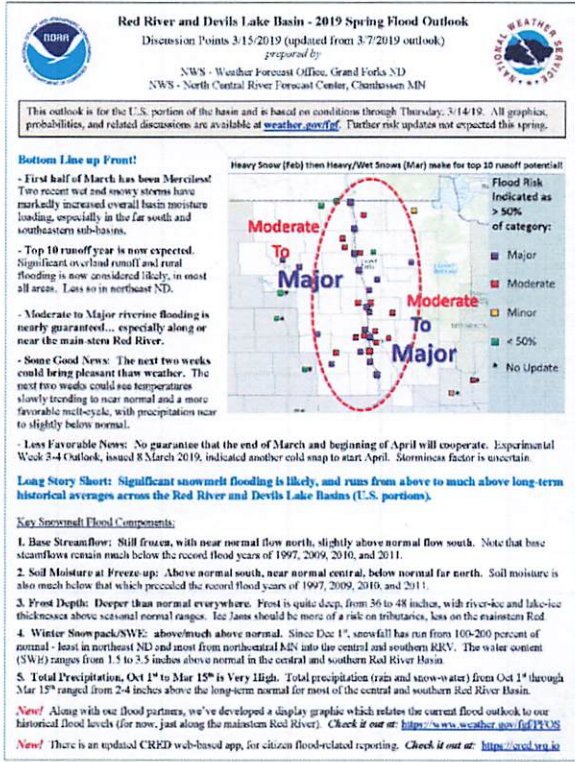
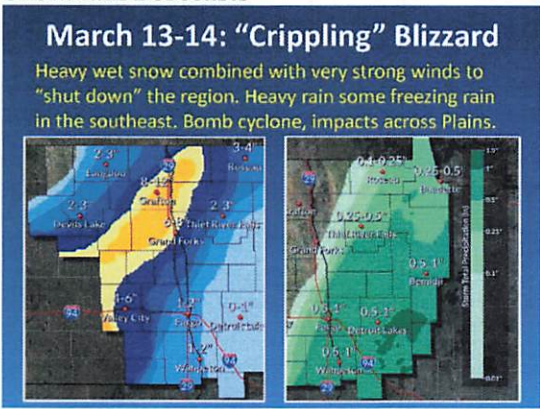
Text

Graphics

Combined text and graphics

Please explain. Text and graphics to better understand severity.

6. Please rate the weather products discussed today based on their usefulness to you in assessing your flood situation.

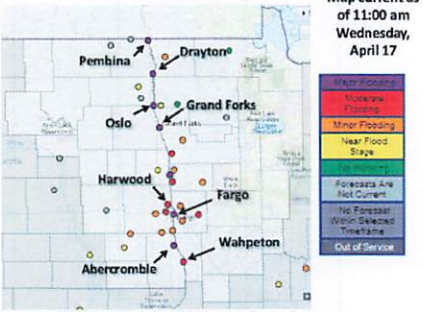
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Spring Flood Outlook</p> 					
<p>Snow/rain Forecasts</p> 					

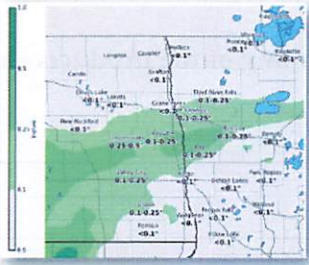
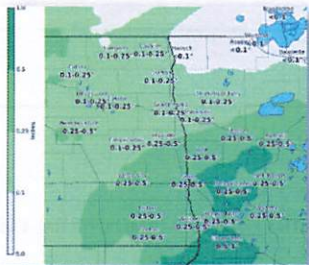
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																																																																																																																																																																																																																																																
<p>Long range probabilistic outlook</p> <div> <p>DEVILS LAKE & STUMP LAKE (not updated) <small>Very large Probabilistic Outlook Valid March 1, 2019 - September 30, 2019</small></p> <p>LOCATION: 254 254 253 254 253 254 253 254</p> <p>WATER DAY: 1440.1 1440.7 1440.6 1440.6 1440.6 1440.7 1440.7 1440.4</p> <p>RAIL STUMP LAKE: 1440.1 1440.2 1440.7 1440.0 1440.0 1440.0 1440.1 1440.4</p> <p>The current height of Devils Lake and Stump Lake are 1440.0 ft. MSL.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Devils Lake Basin Runoff Risk has not changed much since February. A somewhat above normal rise is expected, from 1 to 2 ft. No update since 7 Mar 2019. 2. Red River Basin Runoff Risk has jumped markedly. All Red River main stem points will see significantly higher flows. <ul style="list-style-type: none"> - due to significant snow/SWE loads from 9 Mar and 14 Mar storms, over damp and deep frozen antecedent conditions, especially in the far southern Red River Basin, south of Fargo; - coupled with much increased runoff potential from the MN tributaries, and Red Lake River Basin. 3. Snowpack/SWE and runoff potential has increased in most all MN tributaries. Central and South tribes have seen the highest increase in snow and SWE this past week, including the Red Lake River. Roseau River Basin now has a slight increase to just above normal for runoff risk. 4. ND Wild Rice has a quite High Runoff Risk, with much above normal snowpack. Mid to lower Sheyenne has gained appreciably in snow and SWE. High Red River levels lead to sig. backwater at Harwood. Some snow/SWE increases on Maple and Rush Rivers as well. Slight increase on Park River, else northeast ND saw least overall gains in SWE. <p>Color code: Below Normal Moderate Major Flood of Record</p> <p>RED RIVER AND TRIBUTARIES... <small>Long Range Probabilistic Outlook Valid March 13, 2019 - June 10, 2019</small></p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>95%</th> <th>50%</th> <th>25%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> </tr> </thead> <tbody> <tr><td>WAMPELTON</td><td>13.9</td><td>14.1</td><td>14.0</td><td>15.7</td><td>17.0</td><td>18.1</td><td>19.0</td></tr> <tr><td>WYOMON</td><td>21.1</td><td>22.8</td><td>23.9</td><td>25.1</td><td>26.1</td><td>27.6</td><td>29.6</td></tr> <tr><td>FAIRBANKS</td><td>31.0</td><td>34.9</td><td>36.8</td><td>37.9</td><td>38.9</td><td>40.5</td><td>42.4</td></tr> <tr><td>ROCKWELL</td><td>36.0</td><td>39.5</td><td>39.0</td><td>39.5</td><td>40.0</td><td>40.6</td><td>41.2</td></tr> <tr><td>GRAND FORKS</td><td>45.8</td><td>47.5</td><td>49.0</td><td>50.6</td><td>52.7</td><td>54.6</td><td>56.7</td></tr> <tr><td>MOORE</td><td>27.2</td><td>27.5</td><td>27.8</td><td>27.9</td><td>28.0</td><td>28.1</td><td>28.1</td></tr> <tr><td>WYOMON</td><td>41.8</td><td>42.4</td><td>43.0</td><td>43.7</td><td>44.6</td><td>45.3</td><td>46.0</td></tr> <tr><td>WHEELER</td><td>51.0</td><td>51.9</td><td>52.2</td><td>53.0</td><td>53.7</td><td>54.5</td><td>54.7</td></tr> </tbody> </table> <p>Minnesota Tributaries:</p> <table border="1"> <tbody> <tr><td>ROSEAU RIVER</td><td>14.0</td><td>15.0</td><td>15.8</td><td>17.2</td><td>18.6</td><td>20.3</td><td>22.7</td></tr> <tr><td>INTERNATIONAL RIVER</td><td>9.5</td><td>9.8</td><td>10.0</td><td>10.4</td><td>11.2</td><td>12.9</td><td>13.0</td></tr> <tr><td>WYOMON</td><td>21.2</td><td>21.8</td><td>22.7</td><td>23.9</td><td>25.1</td><td>26.7</td><td>29.1</td></tr> <tr><td>WOLF CREEK RIVER</td><td>10.8</td><td>12.0</td><td>12.8</td><td>13.9</td><td>15.6</td><td>17.1</td><td>18.0</td></tr> <tr><td>WOLF RIVER</td><td>31.6</td><td>32.0</td><td>32.6</td><td>33.3</td><td>34.0</td><td>35.0</td><td>35.6</td></tr> <tr><td>PARSONS RIVER</td><td>17.0</td><td>18.0</td><td>20.3</td><td>22.0</td><td>23.9</td><td>24.7</td><td>25.7</td></tr> <tr><td>GRAND HILL RIVER</td><td>26.6</td><td>27.9</td><td>29.4</td><td>31.2</td><td>34.4</td><td>37.0</td><td>39.1</td></tr> <tr><td>RED LAKE RIVER</td><td>12.4</td><td>13.7</td><td>13.1</td><td>13.3</td><td>13.5</td><td>13.6</td><td>13.7</td></tr> <tr><td>ROSEAU RIVER</td><td>21.6</td><td>22.5</td><td>24.3</td><td>26.9</td><td>29.5</td><td>30.4</td><td>32.9</td></tr> <tr><td>GRAND FORKS RIVER</td><td>45.0</td><td>46.7</td><td>45.7</td><td>46.6</td><td>48.3</td><td>51.0</td><td>51.1</td></tr> <tr><td>WOLF RIVER</td><td>104.0</td><td>105.6</td><td>106.1</td><td>109.0</td><td>109.1</td><td>110.1</td><td>110.9</td></tr> <tr><td>ROSEAU RIVER</td><td>807.4</td><td>807.7</td><td>808.4</td><td>809.5</td><td>809.9</td><td>812.0</td><td>812.0</td></tr> <tr><td>ROSEAU RIVER</td><td>14.1</td><td>14.0</td><td>13.9</td><td>15.4</td><td>17.9</td><td>18.8</td><td>19.4</td></tr> </tbody> </table> <p>North Dakota Tributaries:</p> <table border="1"> <tbody> <tr><td>WILKINSON RIVER</td><td>20.0</td><td>21.9</td><td>23.4</td><td>24.5</td><td>25.6</td><td>26.9</td><td>27.5</td></tr> <tr><td>MARSHFIELD</td><td>15.2</td><td>15.3</td><td>16.6</td><td>18.0</td><td>19.9</td><td>21.7</td><td>22.7</td></tr> <tr><td>GRAND FORKS</td><td>20.2</td><td>20.5</td><td>21.1</td><td>21.2</td><td>21.2</td><td>21.2</td><td>21.2</td></tr> <tr><td>WOLF CREEK RIVER</td><td>21.2</td><td>21.3</td><td>21.3</td><td>21.3</td><td>21.3</td><td>21.3</td><td>21.3</td></tr> <tr><td>GRAND FORKS</td><td>91.0</td><td>91.9</td><td>92.1</td><td>92.1</td><td>92.2</td><td>92.3</td><td>92.4</td></tr> <tr><td>WOLF RIVER</td><td>11.8</td><td>12.1</td><td>12.8</td><td>13.5</td><td>14.4</td><td>14.4</td><td>15.0</td></tr> <tr><td>GRAND FORKS</td><td>23.0</td><td>23.8</td><td>25.5</td><td>25.8</td><td>26.9</td><td>28.0</td><td>28.1</td></tr> <tr><td>GRAND FORKS</td><td>6.1</td><td>6.4</td><td>12.1</td><td>13.5</td><td>14.4</td><td>16.5</td><td>17.9</td></tr> <tr><td>GRAND FORKS</td><td>7.3</td><td>7.8</td><td>8.0</td><td>8.5</td><td>9.6</td><td>9.9</td><td>12.2</td></tr> <tr><td>GRAND FORKS</td><td>6.5</td><td>1.8</td><td>19.3</td><td>14.1</td><td>16.1</td><td>17.9</td><td>19.4</td></tr> <tr><td>GRAND FORKS</td><td>6.6</td><td>6.1</td><td>6.5</td><td>7.1</td><td>8.7</td><td>11.8</td><td>15.8</td></tr> <tr><td>GRAND FORKS</td><td>6.1</td><td>10.6</td><td>11.7</td><td>12.0</td><td>14.0</td><td>20.5</td><td>21.2</td></tr> </tbody> </table> </div>	LOCATION	95%	50%	25%	50%	25%	10%	5%	WAMPELTON	13.9	14.1	14.0	15.7	17.0	18.1	19.0	WYOMON	21.1	22.8	23.9	25.1	26.1	27.6	29.6	FAIRBANKS	31.0	34.9	36.8	37.9	38.9	40.5	42.4	ROCKWELL	36.0	39.5	39.0	39.5	40.0	40.6	41.2	GRAND FORKS	45.8	47.5	49.0	50.6	52.7	54.6	56.7	MOORE	27.2	27.5	27.8	27.9	28.0	28.1	28.1	WYOMON	41.8	42.4	43.0	43.7	44.6	45.3	46.0	WHEELER	51.0	51.9	52.2	53.0	53.7	54.5	54.7	ROSEAU RIVER	14.0	15.0	15.8	17.2	18.6	20.3	22.7	INTERNATIONAL RIVER	9.5	9.8	10.0	10.4	11.2	12.9	13.0	WYOMON	21.2	21.8	22.7	23.9	25.1	26.7	29.1	WOLF CREEK RIVER	10.8	12.0	12.8	13.9	15.6	17.1	18.0	WOLF RIVER	31.6	32.0	32.6	33.3	34.0	35.0	35.6	PARSONS RIVER	17.0	18.0	20.3	22.0	23.9	24.7	25.7	GRAND HILL RIVER	26.6	27.9	29.4	31.2	34.4	37.0	39.1	RED LAKE RIVER	12.4	13.7	13.1	13.3	13.5	13.6	13.7	ROSEAU RIVER	21.6	22.5	24.3	26.9	29.5	30.4	32.9	GRAND FORKS RIVER	45.0	46.7	45.7	46.6	48.3	51.0	51.1	WOLF RIVER	104.0	105.6	106.1	109.0	109.1	110.1	110.9	ROSEAU RIVER	807.4	807.7	808.4	809.5	809.9	812.0	812.0	ROSEAU RIVER	14.1	14.0	13.9	15.4	17.9	18.8	19.4	WILKINSON RIVER	20.0	21.9	23.4	24.5	25.6	26.9	27.5	MARSHFIELD	15.2	15.3	16.6	18.0	19.9	21.7	22.7	GRAND FORKS	20.2	20.5	21.1	21.2	21.2	21.2	21.2	WOLF CREEK RIVER	21.2	21.3	21.3	21.3	21.3	21.3	21.3	GRAND FORKS	91.0	91.9	92.1	92.1	92.2	92.3	92.4	WOLF RIVER	11.8	12.1	12.8	13.5	14.4	14.4	15.0	GRAND FORKS	23.0	23.8	25.5	25.8	26.9	28.0	28.1	GRAND FORKS	6.1	6.4	12.1	13.5	14.4	16.5	17.9	GRAND FORKS	7.3	7.8	8.0	8.5	9.6	9.9	12.2	GRAND FORKS	6.5	1.8	19.3	14.1	16.1	17.9	19.4	GRAND FORKS	6.6	6.1	6.5	7.1	8.7	11.8	15.8	GRAND FORKS	6.1	10.6	11.7	12.0	14.0	20.5	21.2					
LOCATION	95%	50%	25%	50%	25%	10%	5%																																																																																																																																																																																																																																																																														
WAMPELTON	13.9	14.1	14.0	15.7	17.0	18.1	19.0																																																																																																																																																																																																																																																																														
WYOMON	21.1	22.8	23.9	25.1	26.1	27.6	29.6																																																																																																																																																																																																																																																																														
FAIRBANKS	31.0	34.9	36.8	37.9	38.9	40.5	42.4																																																																																																																																																																																																																																																																														
ROCKWELL	36.0	39.5	39.0	39.5	40.0	40.6	41.2																																																																																																																																																																																																																																																																														
GRAND FORKS	45.8	47.5	49.0	50.6	52.7	54.6	56.7																																																																																																																																																																																																																																																																														
MOORE	27.2	27.5	27.8	27.9	28.0	28.1	28.1																																																																																																																																																																																																																																																																														
WYOMON	41.8	42.4	43.0	43.7	44.6	45.3	46.0																																																																																																																																																																																																																																																																														
WHEELER	51.0	51.9	52.2	53.0	53.7	54.5	54.7																																																																																																																																																																																																																																																																														
ROSEAU RIVER	14.0	15.0	15.8	17.2	18.6	20.3	22.7																																																																																																																																																																																																																																																																														
INTERNATIONAL RIVER	9.5	9.8	10.0	10.4	11.2	12.9	13.0																																																																																																																																																																																																																																																																														
WYOMON	21.2	21.8	22.7	23.9	25.1	26.7	29.1																																																																																																																																																																																																																																																																														
WOLF CREEK RIVER	10.8	12.0	12.8	13.9	15.6	17.1	18.0																																																																																																																																																																																																																																																																														
WOLF RIVER	31.6	32.0	32.6	33.3	34.0	35.0	35.6																																																																																																																																																																																																																																																																														
PARSONS RIVER	17.0	18.0	20.3	22.0	23.9	24.7	25.7																																																																																																																																																																																																																																																																														
GRAND HILL RIVER	26.6	27.9	29.4	31.2	34.4	37.0	39.1																																																																																																																																																																																																																																																																														
RED LAKE RIVER	12.4	13.7	13.1	13.3	13.5	13.6	13.7																																																																																																																																																																																																																																																																														
ROSEAU RIVER	21.6	22.5	24.3	26.9	29.5	30.4	32.9																																																																																																																																																																																																																																																																														
GRAND FORKS RIVER	45.0	46.7	45.7	46.6	48.3	51.0	51.1																																																																																																																																																																																																																																																																														
WOLF RIVER	104.0	105.6	106.1	109.0	109.1	110.1	110.9																																																																																																																																																																																																																																																																														
ROSEAU RIVER	807.4	807.7	808.4	809.5	809.9	812.0	812.0																																																																																																																																																																																																																																																																														
ROSEAU RIVER	14.1	14.0	13.9	15.4	17.9	18.8	19.4																																																																																																																																																																																																																																																																														
WILKINSON RIVER	20.0	21.9	23.4	24.5	25.6	26.9	27.5																																																																																																																																																																																																																																																																														
MARSHFIELD	15.2	15.3	16.6	18.0	19.9	21.7	22.7																																																																																																																																																																																																																																																																														
GRAND FORKS	20.2	20.5	21.1	21.2	21.2	21.2	21.2																																																																																																																																																																																																																																																																														
WOLF CREEK RIVER	21.2	21.3	21.3	21.3	21.3	21.3	21.3																																																																																																																																																																																																																																																																														
GRAND FORKS	91.0	91.9	92.1	92.1	92.2	92.3	92.4																																																																																																																																																																																																																																																																														
WOLF RIVER	11.8	12.1	12.8	13.5	14.4	14.4	15.0																																																																																																																																																																																																																																																																														
GRAND FORKS	23.0	23.8	25.5	25.8	26.9	28.0	28.1																																																																																																																																																																																																																																																																														
GRAND FORKS	6.1	6.4	12.1	13.5	14.4	16.5	17.9																																																																																																																																																																																																																																																																														
GRAND FORKS	7.3	7.8	8.0	8.5	9.6	9.9	12.2																																																																																																																																																																																																																																																																														
GRAND FORKS	6.5	1.8	19.3	14.1	16.1	17.9	19.4																																																																																																																																																																																																																																																																														
GRAND FORKS	6.6	6.1	6.5	7.1	8.7	11.8	15.8																																																																																																																																																																																																																																																																														
GRAND FORKS	6.1	10.6	11.7	12.0	14.0	20.5	21.2																																																																																																																																																																																																																																																																														
<p>Flood risk</p> <div> <p>2019 Spring Flood Outlook <small>Above Normal Flood Risk Continues</small></p> <p>Significant Snowmelt Flooding Expected</p> <ul style="list-style-type: none"> The threat for significant snowmelt flooding continues to be above normal throughout the Red River Basin. Major flooding is expected along the mainstem Red River with moderate to major flooding on the tributaries. Future temperatures and precipitation (snow + rain) will have a big impact on flood potential. The later the snowmelt gets, the more the risk for rapid and/or rainfall enhanced runoff increases. Stay tuned for updated information as we get closer to the spring melt. </div>																																																																																																																																																																																																																																																																																					







	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Percent chance of exceedance</p> <p>2019 Spring Flood Outlook for Red River at Drayton Valid 03-16-2019 through 06-16-2019</p> <p>% Chance of reaching or exceeding this level</p> <p>River Level: 11.9 ft as of 03-14-2019</p> <p><small>*This outlook graphic shows the most likely river stage range based on the latest forecast. There is a 5% chance of values higher than depicted here. *Graphic created on 03/14/2019</small></p>					
<p>Hydrologic Outlook/Thaw Updates</p> <p>Hydrologic Outlook/Thaw Updates</p> <ul style="list-style-type: none"> Monday, March 18th <ul style="list-style-type: none"> Favorable melt conditions to persist Daytime temperatures warming into the 40s and 50s will help ripen the snowpack, but low temperatures dipping back below freezing will keep water from entering the river system No major weather systems expected for the next week Thursday, March 21st <ul style="list-style-type: none"> Favorable melt conditions to persist Temperatures above freezing during the day and below freezing at night will start to create some ponding and water moving into local drainage Full blown river flooding and extensive overland flooding not expected to begin through at least early next week March 15th outlook remains valid as recent temperature and precipitation pattern has been accounted for 					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Flood Warning 376 WGUS43 KFGF 271441 FLWFGF BULLETIN - IMMEDIATE BROADCAST REQUESTED Flood Warning National Weather Service Eastern North Dakota/Grand Forks ND 941 AM CDT Wed Mar 27 2019</p> <p>...The National Weather Service in Grand Forks, ND has issued a flood warning (new) for these river locations in Minnesota...North Dakota...</p> <p>new flooding is forecast to occur at... * Wahpeton...on the Red River...in Wilkin and Richland Counties.</p> <p>. A combination of reservoir outflows and localized snowmelt is causing the Wahpeton stage to slowly rise.</p> <p>Forecast temperatures show continued above freezing temperatures over the next 24 hours, followed by cooler temperatures March 29 through 31 More snowmelt is expected today.</p> <p>Below freezing forecast temperatures during March 30-31 should temporarily shut down the melt.</p> <p>A more typical springtime temperature regime, with daytime highs above freezing, and nighttime lows below freezing, is currently forecast for the first week of April. This would result in an ideal slow snowmelt pattern during that time.</p> <p>The current stage is affected by 1 to 2 feet of ice.</p> <p>*** A follow-up flood statement with more detailed flooding information will be issued shortly. ***</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-271541- /O.NEW.KFGF.FL.W.0001.190329T0600Z-190402T1200Z/ /WHNN8.1.SM.190329T0600Z.190330T1200Z.190401T0600Z.NO/ 941 AM CDT Wed Mar 27 2019</p> <p>The National Weather Service in Grand Forks, ND has issued a new Flood Warning for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River * from late Thursday night to Tuesday morning. * At 8:30 AM Wednesday the stage was 10.2 feet. * Minor Flood Stage is 11.0 feet. * For the next 7 days...Minor flooding is forecast. * Forecast...rise above Flood Stage by early Friday morning and continue to rise to near 11.5 feet by Saturday mid-morning. The river will fall below Flood Stage by early Monday morning. <p>&&</p> <p>LAT...LON 4650 9684 4650 9663 4603 9641 4602 9672</p> <p>\$\$</p> <p>HydroTeam FGF</p>				✓	

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																	
<p>Flood statement</p> <p>713 WGUS83 KFGF 171652 FLSFGF Flood Statement National Weather Service Eastern North Dakota/Grand Forks ND 1152 AM CDT Wed Apr 17 2019</p> <p>...The flood warning is now cancelled for these river locations in Minnesota...</p> <ul style="list-style-type: none"> * Alvarado...on the Snake River...in Marshall County <p>...The flood warning has been extended for these river locations in North Dakota...Minnesota...</p> <ul style="list-style-type: none"> * Hickson...on the Red River...in Cass County * Sabin...on the South Branch Buffalo River...in Clay County * Hawley...on the Buffalo River...in Clay County * Enderlin...on the Maple River...in Cass and Ransom Counties <p>...The flood warning continues for these river locations in Minnesota...North Dakota...</p> <ul style="list-style-type: none"> * Wahpeton...on the Red River ...in Wilkin and Richland Counties * Fargo...on the Red River ...in Clay and Cass Counties * Halstad...on the Red River ...in Norman and Traill Counties * East Grand Forks...on the Red River ...in Polk and Grand Forks Counties * Oslo...on the Red River ...in Marshall...Polk...Grand Forks and Walsh Counties * Drayton...on the Red River ...in Kittson...Marshall...Pembina and Walsh Counties * Pembina...on the Red River ...in Kittson and Pembina Counties * Dilworth...on the Buffalo River ...in Clay County * Twin Valley...on the Wild Rice River (MN) ...in Norman County * Hendrum...on the Wild Rice River (MN) ...in Norman County * Shelly...on the Marsh River ...in Norman County * Climax...on the Sandhill River ...in Polk County * Crookston...on the Red Lake River ...in Polk County * Hallock...on the Two Rivers River ...in Kittson County * Abercrombie...on the Wild Rice River (ND) ...in Richland County * Kindred...on the Sheyenne River ...in Cass and Richland Counties * West Fargo Diversion...on the Sheyenne River ...in Cass County * Harwood...on the Sheyenne River ...in Cass County * Mapleton...on the Maple River ...in Cass County <p>.This forecast is for a 7-day period...the highest stage indicated may not reflect the crest for this event.</p> <p>Forecasts are updated daily and stage values will change as new weather and river information is used.</p> <p>River forecasts use 24 hours of forecast precipitation. However, depending on the situation, they may include precipitation expected through the next 72 hours.</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-181653- /O.CON.KFGF.FL.W.0901.00000T0000Z-00000T0000Z/ /WHNBR.2.SM.190328T0937Z.190401T1115Z.00000T0000Z.NO/ 1152 AM CDT Wed Apr 17 2019</p> <p>The Flood Warning continues for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River. * until further notice...or until the warning is cancelled. * At 10:30 AM Wednesday the stage was 12.9 feet. * Minor flooding is occurring and during the next 7 days...Moderate flooding is forecast. * Moderate Flood Stage is 13.0 feet. * The river is forecast to crest at 14.5 (give or take one foot) on Sunday morning. * Reservoir outflows upstream are being lessened by the USACE. * Impact Statement(s) - At 15.0 feet, MAJOR FLOOD. Wahpeton storm sewer outlets and Main Street closed. <p>&&</p> <p>Daily 7am CDT/6am CST forecast stage in feet:</p> <table border="1"> <thead> <tr> <th>Date (month/day)</th> <th>Thu 04/18</th> <th>Fri 04/19</th> <th>Sat 04/20</th> <th>Sun 04/21</th> <th>Mon 04/22</th> <th>Tue 04/23</th> <th>Wed 04/24</th> </tr> </thead> <tbody> <tr> <td>...</td></tr> <tr> <td>...truncated 784 lines...</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24truncated 784 lines...											✓	
Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24															
...																						
...truncated 784 lines...																						

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation Report – Map of forecast points</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, Apr 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Map of Flood Forecast Points</p>  <p>Map current as of 11:00 am Wednesday, April 17</p> <p>Check here for the latest river forecasts</p> <p>Message of the Day:</p> <ul style="list-style-type: none"> Initial crest: rising river levels continue on the Red River near and north of Drayton. Secondary crest: secondary rises ongoing due to snowmelt/rainfall. Secondary crests should be lower than first for most locations (except possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks). Overland flooding continues along and near the Red River. <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>					
<p>Situation Report - Impacts</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Potential Impacts:</p> <ul style="list-style-type: none"> Snow melt from last week's winter storm continues to cause secondary rises in rivers and tributaries. This snowmelt and ongoing rainfall will also serve to lengthen duration of high water. <ul style="list-style-type: none"> Secondary crest not expected to be higher than previous crest for most locations, with the exception of possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks. Several roads (including I-29) continue to be impacted due to overland and river flooding, especially near the Red River. Backwater is still affecting many locations on the tributaries while few ice impacts remain. Continue to pay attention to closures and notices from local authorities. <p>River Basins Potentially Impacted:</p> <ul style="list-style-type: none"> Initial flood crest: <ul style="list-style-type: none"> The Red River at Drayton is nearing crest while levels continue to rise at Pembina. Secondary flood crest: <ul style="list-style-type: none"> Most locations across the southern portion of the basin are beginning their secondary rise. Backwater from the main stem Red River will continue to keep water levels high, especially between Fargo/Moorhead and the international border. <p>How to Monitor River Levels and Forecasts:</p> <ul style="list-style-type: none"> NWS River Observation/Forecast Page NWS Grand Forks Flood Briefing Page <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																	
<p>Situation Report – Temp and Precip Outlook</p> <p>National Weather Service Grand Forks, ND Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Temperature Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Highs</th> <th>Lows (Overnight)</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>48-51</td> <td>35-38</td> </tr> <tr> <td>Thursday, April 18</td> <td>52-56</td> <td>31-34</td> </tr> <tr> <td>Friday, April 19</td> <td>59-65</td> <td>41-46</td> </tr> <tr> <td>Saturday, April 20</td> <td>56-66</td> <td>35-40</td> </tr> <tr> <td>Sunday, April 21</td> <td>52-57</td> <td>31-36</td> </tr> <tr> <td>Monday, April 22</td> <td>50-57</td> <td>32-37</td> </tr> </tbody> </table> <p>Precipitation Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Type</th> <th>Liquid Amounts</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>Rain and Snow</td> <td>0"-0.50"</td> <td>Mainly southern RRV</td> </tr> <tr> <td>Thursday, April 18</td> <td>Showers/Thunder</td> <td>0"-0.10"</td> <td>Eastern ND/NW MN</td> </tr> <tr> <td>Friday, April 19</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Saturday, April 20</td> <td>Showers</td> <td>0"-0.20"</td> <td>Along/north Hwy 2</td> </tr> <tr> <td>Sunday, April 21</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Monday, April 22</td> <td>None</td> <td>0"</td> <td></td> </tr> </tbody> </table> <p>Click for a description of this product Click to evaluate this product</p>	Day of the Week	Highs	Lows (Overnight)	Wednesday, April 17	48-51	35-38	Thursday, April 18	52-56	31-34	Friday, April 19	59-65	41-46	Saturday, April 20	56-66	35-40	Sunday, April 21	52-57	31-36	Monday, April 22	50-57	32-37	Day of the Week	Type	Liquid Amounts	Location	Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV	Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN	Friday, April 19	None	0"		Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2	Sunday, April 21	None	0"		Monday, April 22	None	0"						
Day of the Week	Highs	Lows (Overnight)																																																				
Wednesday, April 17	48-51	35-38																																																				
Thursday, April 18	52-56	31-34																																																				
Friday, April 19	59-65	41-46																																																				
Saturday, April 20	56-66	35-40																																																				
Sunday, April 21	52-57	31-36																																																				
Monday, April 22	50-57	32-37																																																				
Day of the Week	Type	Liquid Amounts	Location																																																			
Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV																																																			
Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN																																																			
Friday, April 19	None	0"																																																				
Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2																																																			
Sunday, April 21	None	0"																																																				
Monday, April 22	None	0"																																																				
<p>Situation report – 24 hour precipitation</p> <p>National Weather Service Grand Forks, ND Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Precipitation over the last 24 hours in the River Forecasts (7 am Tue to 7 am Wed)</p>  <p>24 hour forecast precipitation in the River Forecasts (7 am Wed to 7 am Thu)</p>  <p>Click for a description of this product Click to evaluate this product</p>																																																						

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation report – Message of the Day</p>  <p>National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Message of the Day: Widespread river flooding and localized overland flooding continues. Red River continues to rise near and north of Drayton while southern portions of the valley are seeing re-rises due to snowmelt and ongoing rainfall.</p>   <p>Water on Demers Ave near the Sorlie Bridge in East Grand Forks MN on 4/12/19. Photo courtesy of Carl Jones.</p> <p>Quick facts you should know about flooding:</p> <ul style="list-style-type: none"> Flooding can be caused by heavy rain, rapid snow melt, ice jamming, levee overtopping, dam failure, or from wastewater systems. It only takes 6 inches of fast-moving water to knock you off your feet. A car can be moved in as little as 2 feet of water. 50% of all U.S. natural disasters declared by the President involve flooding. <p>Preparedness:</p> <p>Know your risk: Are you in a flood-prone area? Know your zone: www.fema.gov/flood-zones</p> <ul style="list-style-type: none"> You must purchase separate flood insurance for your home. There is a 30 day wait period between when you buy a flood insurance policy and when it goes into effect. Plan ahead! A Flood Watch is issued when conditions are favorable for flooding. <i>Time to prepare!</i> A Flood Warning is issued when flooding is imminent or occurring. <i>Time to act!</i> <p>Never drive into flood waters! Turn around, don't drown!</p> <p>Find out more information on our web page: www.weather.gov/gf/</p> <p>Follow us on Facebook and Twitter for more up to date information:</p> <p> @NWSGrandForks  @NWSGrand Forks</p> <p> Building a Weather-Ready Nation</p> <p>Click for a description of this product Click to evaluate this product</p>	✓				

7. What changes might you recommend for any of the products shown?

NO changes necessary.

8. Which media would you use to find NWS information about the risk of flooding near you? Please circle all that apply:

Facebook
 Twitter
 Internet
 Other: News

9. Which digital platform are you most likely to use to access NWS resources? Circle one.

Smartphone Tablet Laptop Desktop Other: _____

10. Was anything in the session confusing? Yes No

If Yes, please explain:

11. What improvements could be made in the format or content of this session?

N/A

12. Additional comments:

N/A

Thank you for participating!

Survey Questions - Post-Focus Group Session Survey

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0690-0030. Without this approval, we could not conduct this post-focus group survey collection. Public reporting for this information collection is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Nurture Nature Center at: 518 Northampton Street, Easton, PA 18042, Attn: Rachel Hogan Carr, Executive Director, rhogan@nurturenature.org.

1. Please rate your agreement with the following statements about the forum.

Please check ONE box for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The information was clearly presented.	✓				
I felt comfortable voicing my opinion.		✓			
I know more about the National Weather Service (NWS) resources.	✓				
I feel I could use NWS resources to judge my risk in an extreme weather event.	✓				

2. What are the biggest barriers you face in using NWS flood forecast and warning products? Some examples to consider are lack of computer or phone, lack of internet access, language barriers, NWS products too difficult to understand, or other factors.

Some of the products are too data heavy. Tell me about my city and 50 miles around, not the tristate area.

3. Our goal today was to gather feedback to improve NWS flood forecast and warning tools. Beyond the questions asked today, what else would be important to know about how you gather/would use NWS information about extreme weather risks and your intended actions?

Phone alerts would be best for evacuation,
but not smaller and/or less urgent updates.
Don't wake me at 3 a.m. unless the evacuation
order is complete and it's time to go.

4. After attending today's session, how likely are you to:

Please check ONE box for each statement.

	Very Likely	Somewhat Likely	Neither likely nor unlikely	Somewhat Unlikely	Unlikely
Create or revise plans to deal with extreme weather events using NWS products.				✓	
Share what I learned about NWS products today with others.				✓	
Seek NWS information about extreme weather risks.		✓			
Use NWS products and information in your decision-making			✓		

5. Do you prefer text-based or graphical/visual NWS products in trying to understand your level of risk from flooding? Circle one.

Text

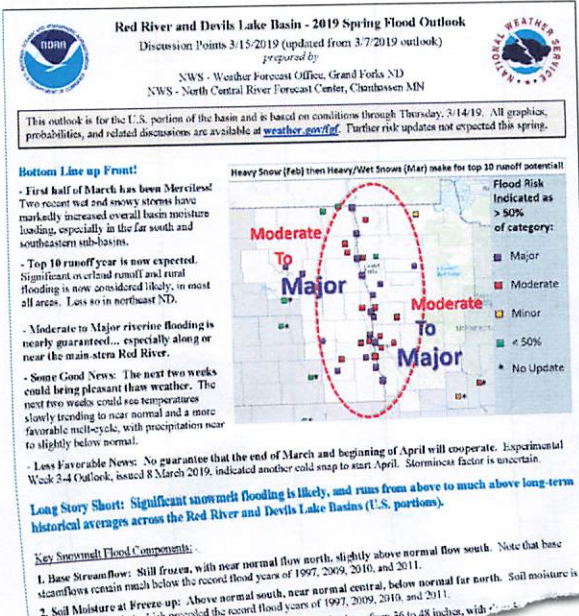
Graphics

Combined text and graphics

Please explain.

The graphic with boxes and major/moderate
per city as well as a message of the day for
context,

6. Please rate the weather products discussed today based on their usefulness to you in assessing your flood situation.

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Spring Flood Outlook</p>  <p>Red River and Devils Lake Basin - 2019 Spring Flood Outlook Discussion Points 3/15/2019 (updated from 3/7/2019 outlook) prepared by NWS - Weather Forecast Office, Grand Forks ND NWS - North Central River Forecast Center, Chanhassen MN</p> <p>This outlook is for the U.S. portion of the basin and is based on conditions through Thursday, 3/14/19. All graphics, probabilities, and related discussions are available at weather.gov/fz. Further risk updates not expected this spring.</p> <p>Bottom Line up Front!</p> <ul style="list-style-type: none"> - First half of March has been Merciful! Two recent wet and snowy storms have markedly increased overall basin moisture loading, especially in the far south and southeastern sub-basins. - Top 10 runoff year is now expected. Significant overland runoff and rural flooding is now considered likely, in most all areas. Less so in northeast ND. - Moderate to Major riverine flooding is nearly guaranteed... especially along or near the main-stem Red River. - Some Good News: The next two weeks could bring pleasant than weather. The next two weeks could see temperatures slowly trending to near normal and a more favorable mid-cycle, with precipitation near to slightly below normal. - Less favorable News: No guarantee that the end of March and beginning of April will cooperate. Experimental Week 2-4 Outlook, issued 8 March 2019, indicated another cold snap to start April. Storminess factor is uncertain. <p>Long Story Short: Significant snowmelt flooding is likely, and runs from above to much above long-term historical averages across the Red River and Devils Lake basins (U.S. portions).</p> <p>Key Snowmelt Flood Components:</p> <ol style="list-style-type: none"> 1. Base Streamflow: Still frozen, with near normal flow north, slightly above normal flow south. Note that base streamflows remain much below the record flood years of 1997, 2009, 2010, and 2011. 2. Soil Moisture at Freeze-up: Above normal south, near normal central, below normal for north. Soil moisture is also much below that which preceded the record flood years of 1997, 2009, 2010, and 2011. 3. Snow Depth: Deeper than normal everywhere. Frost is quite deep, from 36 to 48 inches, with snow on the ground for late should be more of a risk on tributaries, less on the main stem. 				✓	

Long range probabilistic outlook

DEVILS LAKE & STUMP LAKE... (not updated)		Long Range Probabilistic Outlook Valid March 1, 2019 - June 15, 2019						Notes
DATE	95%	90%	75%	50%	25%	10%	5%	
GRAND MAR	1449.1	1419.7	1389.0	1349.4	1315.0	1280.7	1251.4	
EAST STUMP LAKE	1449.1	1440.2	1437.8	1410.0	1379.0	1348.7	1315.4	
The current depths of Devils Lake and Stump Lake are 4161.3 ft. MSL.								
Color code: Below Minor Moderate Major Flood or Beyond								
RED RIVER AND TRIBUTARIES...		Long Range Probabilistic Outlook Valid March 15, 2019 - June 15, 2019						Notes
LOCATION	95%	90%	75%	50%	25%	10%	5%	
MOOREHEAD	13.9	14.1	14.0	13.7	13.0	12.2	11.0	
MOOREHEAD	10.1	10.3	10.4	10.1	10.1	10.0	10.0	
PARKE	31.8	34.9	36.5	37.9	38.9	40.3	41.4	
MOOREHEAD	18.0	18.5	19.0	18.8	18.0	16.6	14.2	
CHANDLER	45.6	47.2	49.0	50.5	52.7	54.6	56.7	
MOOREHEAD	37.2	37.5	37.8	37.9	38.0	38.1	38.1	
MOOREHEAD	41.8	42.4	43.0	43.7	44.8	45.3	46.0	
MOOREHEAD	51.0	51.9	52.2	53.0	53.7	54.6	54.7	
Minnesota Tributaries:								
Red Lake River	18.0	18.0	19.8	17.2	18.0	20.3	21.7	
Red Lake River	9.5	9.8	10.0	10.4	11.2	12.9	13.0	
Red Lake River	21.2	21.8	22.7	23.9	25.1	26.7	29.1	
Red Lake River	10.9	12.0	12.8	13.9	15.0	17.1	18.0	
Red Lake River	31.6	33.0	32.6	33.3	34.0	35.0	35.8	
Red Lake River	17.0	18.0	20.3	22.0	23.2	24.7	25.7	
Red Lake River	26.6	27.9	29.4	31.2	34.4	37.0	39.1	
Red Lake River	12.4	12.7	13.1	13.3	13.5	13.8	13.7	
Red Lake River	21.6	22.0	24.3	26.9	29.5	30.4	32.9	
Red Lake River	27.0	28.7	25.7	26.6	28.1	32.0	33.1	
Red Lake River	104.2	105.6	108.3	109.0	109.1	110.5	110.9	
Red Lake River	807.4	807.7	808.4	809.5	809.9	812.5	812.0	
Red Lake River	14.1	14.0	14.0	14.4	14.7	14.9	14.4	
North Dakota Tributaries:								
Red Lake River	20.0	21.9	23.4	24.8	25.6	26.9	27.5	
Red Lake River	1.9	18.3	18.6	18.0	19.8	21.7	22.7	
Red Lake River	10.8	16.3	18.3	20.0	22.4	23.0	24.0	
Red Lake River	20.2	20.5	21.1	21.2	21.2	21.2	21.2	
Red Lake River	21.2	21.2	21.3	21.3	21.3	21.3	21.3	
Red Lake River	91.9	91.9	92.1	92.1	92.2	92.3	92.4	
Red Lake River	11.8	12.1	12.8	13.3	13.6	14.4	15.0	
Red Lake River	39.0	39.9	39.5	39.8	39.2	44.0	44.1	
Red Lake River	9.1	9.4	11.1	13.3	14.6	16.5	17.9	
Red Lake River	7.3	7.8	8.0	8.5	9.6	9.9	10.2	
Red Lake River	0.0	1.0	1.1	1.1	1.1	1.7	1.9	
Red Lake River	5.0	6.1	6.9	7.6	8.7	10.0	10.9	
Red Lake River	11.7	11.7	13.0	14.0	14.0	15.5	16.2	

Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful

Notes

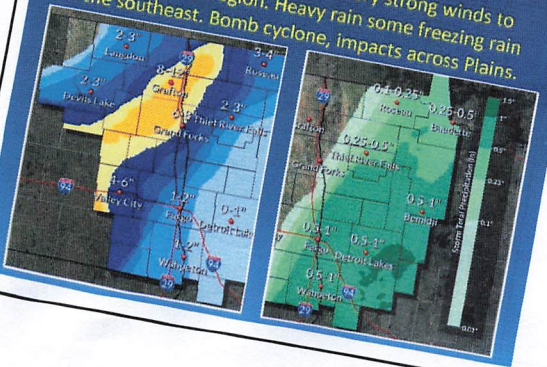
- Devils Lake Basin Runoff Risk has not changed much since February. A somewhat above normal rise is expected, from 1 to 2 ft. No update since 7 Mar 2019.
 Note: Devils Lake is currently about 1.5 feet lower than this time last year.
- Red River Basin Runoff Risk has jumped markedly. All Red River main-stem points will see significantly higher flows, - due to significant snow/SWE loads from 9 Mar and 14 Mar storms, over damp and deep frozen antecedent conditions, especially in the far southern Red River Basin, south of Fargo; coupled with much increased runoff potential from the MN tributaries, and Red Lake River Basin.
- Snowpack/SWE and runoff potential has increased in most all MN tributaries. Central and South tribis have seen the highest increase in snow and SWE this past week, including the Red Lake River. Roscoe River Basin now has a slight increase to just above normal for runoff risk.
- ND Wild Rice has a quite High Runoff Risk, with much above normal snowpack. Mid to Lower Sheyenne has gained appreciably in snow and SWE. High Red River levels lead to sig. backwater at Harwood. Some snow/SWE increases on Maple and Rush Rivers as well. Slight increase on Park River, else northeast ND saw least overall gains in SWE.



...one long-term normal for mos. of the central and southern Red River Basin.
 ...season (rain and snow-water) from Oct 1st through
 ...River Basin. The water content
 ...with our flood partners, we've developed a display graphic which relates the current flood outlook to our
 ...critical flood levels (for now, just along the mainstem Red River). Check it out at: <https://www.weather.gov/fur/CRFOS>
 ...Check it out at: <https://cred.org.ki>
New! There is an updated CRED web-based app, for citizen flood-related reporting. Check it out at: <https://cred.org.ki>

Snow/rain Forecasts

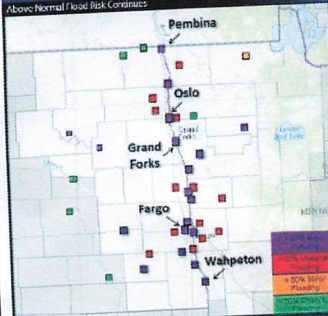
March 13-14: "Crippling" Blizzard
 Heavy wet snow combined with very strong winds to "shut down" the region. Heavy rain some freezing rain in the southeast. Bomb cyclone, impacts across Plains.



Flood risk

2019 Spring Flood Outlook

Above Normal Flood Risk Continues



Significant Snowmelt Flooding Expected

- The threat for **significant snowmelt flooding** continues to be **above normal** throughout the Red River Basin
- **Major flooding** is expected along the mainstem Red River with **moderate to major flooding** on the tributaries
- **Future temperatures and precipitation** (snow + rain) will have a big impact on flood potential
- The later the snowmelt gets, the more the risk for **rapid and/or rainfall enhanced runoff** increases
- Stay tuned for updated information as we get closer to the spring melt

Weather Forecast Office

Grand Forks, ND

Issued March 15, 2019 11:42 AM CST




#WFTOnXbox

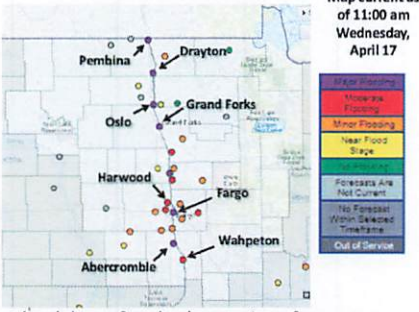
weather.gov/nd

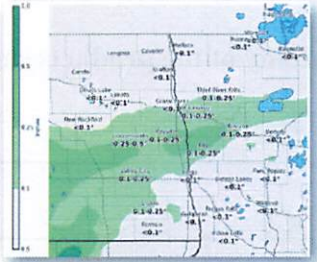
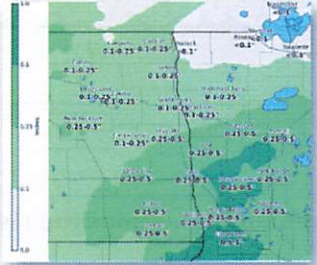





	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Percent chance of exceedance</p> <p>2019 Spring Flood Outlook for Red River at Drayton Valid 03-16-2019 through 06-16-2019</p> <p>River Level: 11.9 ft as of 03-14-2019</p> <p><small>*This outlook graphic shows the most likely river stage range based on the latest forecast. There is a 5% chance of values higher than depicted here. *Figure created on 03-14-2019</small></p>					✓
<p>Hydrologic Outlook/Thaw Updates</p> <p>Hydrologic Outlook/Thaw Updates</p> <ul style="list-style-type: none"> Monday, March 18th <ul style="list-style-type: none"> Favorable melt conditions to persist Daytime temperatures warming into the 40s and 50s will help ripen the snowpack, but low temperatures dipping back below freezing will keep water from entering the river system. No major weather systems expected for the next week. Thursday, March 21st <ul style="list-style-type: none"> Favorable melt conditions to persist Temperatures above freezing during the day and below freezing at night will start to create some ponding and water moving into local drainage. Full blown river flooding and extensive overland flooding not expected to begin through at least early next week. March 15th outlook remains valid as recent temperature and precipitation pattern has been accounted for. 		✓			

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Flood Warning 376 WGUS43 KFGF 271441 FLWFGF BULLETIN - IMMEDIATE BROADCAST REQUESTED Flood Warning National Weather Service Eastern North Dakota/Grand Forks ND 941 AM CDT Wed Mar 27 2019</p> <p>...The National Weather Service in Grand Forks, ND has issued a flood warning (new) for these river locations in Minnesota...North Dakota...</p> <p>new flooding is forecast to occur at... * Wahpeton...on the Red River...in Wilkin and Richland Counties.</p> <p>. A combination of reservoir outflows and localized snowmelt is causing the Wahpeton stage to slowly rise.</p> <p>Forecast temperatures show continued above freezing temperatures over the next 24 hours, followed by cooler temperatures March 29 through 31 More snowmelt is expected today.</p> <p>Below freezing forecast temperatures during March 30-31 should temporarily shut down the melt.</p> <p>A more typical springtime temperature regime, with daytime highs above freezing, and nighttime lows below freezing, is currently forecast for the first week of April. This would result in an ideal slow snowmelt pattern during that time.</p> <p>The current stage is affected by 1 to 2 feet of ice.</p> <p>*** A follow-up flood statement with more detailed flooding information will be issued shortly. ***</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-271541- /O.NEW.KFGF.FL.W.0001.190329T0600Z-190402T1200Z/ /WHNN8.1.SM.190329T0600Z.190330T1200Z.190401T0600Z.NO/ 941 AM CDT Wed Mar 27 2019</p> <p>The National Weather Service in Grand Forks, ND has issued a new Flood Warning for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River * from late Thursday night to Tuesday morning. * At 8:30 AM Wednesday the stage was 10.2 feet. * Minor Flood Stage is 11.0 feet. * For the next 7 days..Minor flooding is forecast. * Forecast...rise above Flood Stage by early Friday morning and continue to rise to near 11.5 feet by Saturday mid-morning. The river will fall below Flood Stage by early Monday morning. <p>&&</p> <p>LAT...LON 4650 9684 4650 9663 4603 9641 4602 9672</p> <p>\$\$</p> <p>HydroTeam FGF</p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																	
<p>Flood statement</p> <p>713 WGUS83 KFGF 171652 FLSFGF Flood Statement National Weather Service Eastern North Dakota/Grand Forks ND 1152 AM CDT Wed Apr 17 2019</p> <p>...The flood warning is now cancelled for these river locations in Minnesota...</p> <ul style="list-style-type: none"> * Alvarado...on the Snake River...in Marshall County <p>...The flood warning has been extended for these river locations in North Dakota...Minnesota...</p> <ul style="list-style-type: none"> * Hickson...on the Red River...in Cass County * Sabin...on the South Branch Buffalo River...in Clay County * Hawley...on the Buffalo River...in Clay County * Enderlin...on the Maple River...in Cass and Ransom Counties <p>...The flood warning continues for these river locations in Minnesota...North Dakota...</p> <ul style="list-style-type: none"> * Wahpeton...on the Red River ...in Wilkin and Richland Counties * Fargo...on the Red River ...in Clay and Cass Counties * Halstad...on the Red River ...in Norman and Traill Counties * East Grand Forks...on the Red River ...in Polk and Grand Forks Counties * Oslo...on the Red River ...in Marshall...Polk...Grand Forks and Walsh Counties * Drayton...on the Red River ...in Kittson...Marshall...Pembina and Walsh Counties * Pembina...on the Red River ...in Kittson and Pembina Counties * Dilworth...on the Buffalo River ...in Clay County * Twin Valley...on the Wild Rice River (MN) ...in Norman County * Hendrum...on the Wild Rice River (MN) ...in Norman County * Shelly...on the Marsh River ...in Norman County * Climax...on the Sandhill River ...in Polk County * Crookston...on the Red Lake River ...in Polk County * Hallock...on the Two Rivers River ...in Kittson County * Abercrombie...on the Wild Rice River (ND) ...in Richland County * Kindred...on the Sheyenne River ...in Cass and Richland Counties * West Fargo Diversion...on the Sheyenne River ...in Cass County * Harwood...on the Sheyenne River ...in Cass County * Mapleton...on the Maple River ...in Cass County <p>...This forecast is for a 7-day period...the highest stage indicated may not reflect the crest for this event.</p> <p>Forecasts are updated daily and stage values will change as new weather and river information is used.</p> <p>River forecasts use 24 hours of forecast precipitation. However, depending on the situation, they may include precipitation expected through the next 72 hours.</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPs/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-181653- /O.CON.KFGF.FL.W.0901.00000T0000Z-00000T0000Z/ /WHNNA.2.SM.190328T0937Z.190401T1115Z.00000T0000Z.NO/ 1152 AM CDT Wed Apr 17 2019</p> <p>The Flood Warning continues for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River. * until further notice...or until the warning is cancelled. * At 10:30 AM Wednesday the stage was 12.9 feet. * Minor flooding is occurring and during the next 7 days...Moderate flooding is forecast. * Moderate Flood Stage is 13.0 feet. * The river is forecast to crest at 14.5 (give or take one foot) on Sunday morning. * Reservoir outflows upstream are being lessened by the USACE. * Impact Statement(s) - At 15.0 feet, MAJOR FLOOD. Wahpeton storm sewer outlets and Main Street closed. <p>&&</p> <p>Daily 7am CDT/6am CST forecast stage in feet:</p> <table border="1"> <thead> <tr> <th>Date (month/day)</th> <th>Thu 04/18</th> <th>Fri 04/19</th> <th>Sat 04/20</th> <th>Sun 04/21</th> <th>Mon 04/22</th> <th>Tue 04/23</th> <th>Wed 04/24</th> </tr> </thead> <tbody> <tr> <td>...</td></tr> <tr> <td>...truncated 784 lines...</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24truncated 784 lines...												
Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24															
...																						
...truncated 784 lines...																						

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation Report – Map of forecast points</p> <p>National Weather Service Grand Forks, ND Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Map of Flood Forecast Points</p>  <p>Map current as of 11:00 am Wednesday, April 17</p> <p>Check here for the latest river forecasts</p> <p>Message of the Day:</p> <ul style="list-style-type: none"> Initial crest: rising river levels continue on the Red River near and north of Drayton. Secondary crest: secondary rises ongoing due to snowmelt/rainfall. Secondary crests should be lower than first for most locations (except possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks). Overland flooding continues along and near the Red River. <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>					
<p>Situation Report - Impacts</p> <p>National Weather Service Grand Forks, ND Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Potential Impacts:</p> <ul style="list-style-type: none"> Snow melt from last week's winter storm continues to cause secondary rises in rivers and tributaries. This snowmelt and ongoing rainfall will also serve to lengthen duration of high water. <ul style="list-style-type: none"> Secondary crest not expected to be higher than previous crest for most locations, with the exception of possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks. Several roads (including I-29) continue to be impacted due to overland and river flooding, especially near the Red River. Backwater is still affecting many locations on the tributaries while few ice impacts remain. Continue to pay attention to closures and notices from local authorities. <p>River Basins Potentially Impacted:</p> <ul style="list-style-type: none"> Initial flood crest: <ul style="list-style-type: none"> The Red River at Drayton is nearing crest while levels continue to rise at Pembina. Secondary flood crest: <ul style="list-style-type: none"> Most locations across the southern portion of the basin are beginning their secondary rise. Backwater from the main stem Red River will continue to keep water levels high, especially between Fargo/Moorhead and the international border. <p>How to Monitor River Levels and Forecasts:</p> <ul style="list-style-type: none"> NWS River Observation/Forecast Page NWS Grand Forks Flood Briefing Page <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																	
<p>Situation Report – Temp and Precip Outlook</p> <p>National Weather Service Grand Forks, ND Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Temperature Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Highs</th> <th>Lows (Overnight)</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>48-51</td> <td>35-38</td> </tr> <tr> <td>Thursday, April 18</td> <td>52-56</td> <td>31-34</td> </tr> <tr> <td>Friday, April 19</td> <td>59-65</td> <td>41-46</td> </tr> <tr> <td>Saturday, April 20</td> <td>56-66</td> <td>35-40</td> </tr> <tr> <td>Sunday, April 21</td> <td>52-57</td> <td>31-36</td> </tr> <tr> <td>Monday, April 22</td> <td>50-57</td> <td>32-37</td> </tr> </tbody> </table> <p>Precipitation Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Type</th> <th>Liquid Amounts</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>Rain and Snow</td> <td>0"-0.50"</td> <td>Mainly southern RRV</td> </tr> <tr> <td>Thursday, April 18</td> <td>Showers/Thunder</td> <td>0"-0.10"</td> <td>Eastern ND/NW MN</td> </tr> <tr> <td>Friday, April 19</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Saturday, April 20</td> <td>Showers</td> <td>0"-0.20"</td> <td>Along/north Hwy 2</td> </tr> <tr> <td>Sunday, April 21</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Monday, April 22</td> <td>None</td> <td>0"</td> <td></td> </tr> </tbody> </table> <p>Click for a description of this product Click to evaluate this product</p>	Day of the Week	Highs	Lows (Overnight)	Wednesday, April 17	48-51	35-38	Thursday, April 18	52-56	31-34	Friday, April 19	59-65	41-46	Saturday, April 20	56-66	35-40	Sunday, April 21	52-57	31-36	Monday, April 22	50-57	32-37	Day of the Week	Type	Liquid Amounts	Location	Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV	Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN	Friday, April 19	None	0"		Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2	Sunday, April 21	None	0"		Monday, April 22	None	0"				✓		
Day of the Week	Highs	Lows (Overnight)																																																				
Wednesday, April 17	48-51	35-38																																																				
Thursday, April 18	52-56	31-34																																																				
Friday, April 19	59-65	41-46																																																				
Saturday, April 20	56-66	35-40																																																				
Sunday, April 21	52-57	31-36																																																				
Monday, April 22	50-57	32-37																																																				
Day of the Week	Type	Liquid Amounts	Location																																																			
Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV																																																			
Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN																																																			
Friday, April 19	None	0"																																																				
Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2																																																			
Sunday, April 21	None	0"																																																				
Monday, April 22	None	0"																																																				
<p>Situation report – 24 hour precipitation</p> <p>National Weather Service Grand Forks, ND Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Precipitation over the last 24 hours in the River Forecasts (7 am Tue to 7 am Wed)</p>  <p>24 hour forecast precipitation in the River Forecasts (7 am Wed to 7 am Thu)</p>  <p>Click for a description of this product Click to evaluate this product</p>			✓																																																			

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation report – Message of the Day</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Message of the Day: Widespread river flooding and localized overland flooding continues. Red River continues to rise near and north of Drayton while southern portions of the valley are seeing re-rises due to snowmelt and ongoing rainfall.</p>  <p>Water on Denvers Ave near the Sorlie Bridge in East Grand Forks MN on 4/12/19. Photo courtesy of Carl Jones.</p> <p>Quick facts you should know about flooding:</p> <ul style="list-style-type: none"> • Flooding can be caused by heavy rain, rapid snow melt, ice jamming, levee overtopping, dam failure, or from wastewater systems. • It only takes 6 inches of fast-moving water to knock you off your feet. • A car can be moved in as little as 2 feet of water. • 90% of all U.S. natural disasters declared by the President involve flooding. <p>Preparedness:</p> <p>Know your risk: Are you in a flood-prone area? Know your zone: www.fema.gov/flood-zones</p> <ul style="list-style-type: none"> - You must purchase separate flood insurance for your home. There is a 30 day wait period between when you buy a flood insurance policy and when it goes into effect. Plan ahead! - A Flood Watch is issued when conditions are favorable for flooding. Time to prepare! - A Flood Warning is issued when flooding is imminent or occurring. Time to act! <p>Never drive into flood waters! Turn around, don't drown!</p> <p>Find out more information on our web page: www.weather.gov/fat/ Follow us on Facebook and Twitter for more up to date information:  @NWSGrandForks  @NWSGrand Forks</p> <p>Building a Weather-Ready Nation</p> <p>Click for a description of this product Click to evaluate this product</p>	✓				

7. What changes might you recommend for any of the products shown?

More context!
Give a level of urgency and don't make the details overly complicated.

8. Which media would you use to find NWS information about the risk of flooding near you? Please circle all that apply:

Facebook
 Twitter
 Internet
 Other: _____

9. Which digital platform are you most likely to use to access NWS resources? Circle one.

Smartphone

Tablet

Laptop

Desktop

Other: _____

10. Was anything in the session confusing? Yes

No

If Yes, please explain:

11. What improvements could be made in the format or content of this session?

They did a good job.

12. Additional comments:

Good work!

Thank you for participating!

Survey Questions - Post-Focus Group Session Survey

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0690-0030. Without this approval, we could not conduct this post-focus group survey collection. Public reporting for this information collection is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Nurture Nature Center at: 518 Northampton Street, Easton, PA 18042, Attn: Rachel Hogan Carr, Executive Director, rhogan@nurturenature.org.

1. Please rate your agreement with the following statements about the forum.

Please check ONE box for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The information was clearly presented.	X				
I felt comfortable voicing my opinion.	X				
I know more about the National Weather Service (NWS) resources.	X				
I feel I could use NWS resources to judge my risk in an extreme weather event.	X				

2. What are the biggest barriers you face in using NWS flood forecast and warning products? Some examples to consider are lack of computer or phone, lack of internet access, language barriers, NWS products too difficult to understand, or other factors.

I'm literate in usage of NWS products.

3. Our goal today was to gather feedback to improve NWS flood forecast and warning tools. Beyond the questions asked today, what else would be important to know about how you gather/would use NWS information about extreme weather risks and your intended actions?

None

4. After attending today's session, how likely are you to:

Please check ONE box for each statement.

	Very Likely	Somewhat Likely	Neither likely nor unlikely	Somewhat Unlikely	Unlikely
Create or revise plans to deal with extreme weather events using NWS products.		X			
Share what I learned about NWS products today with others.	X				
Seek NWS information about extreme weather risks.	X				
Use NWS products and information in your decision-making	X				

5. Do you prefer text-based or graphical/visual NWS products in trying to understand your level of risk from flooding? Circle one.

Text

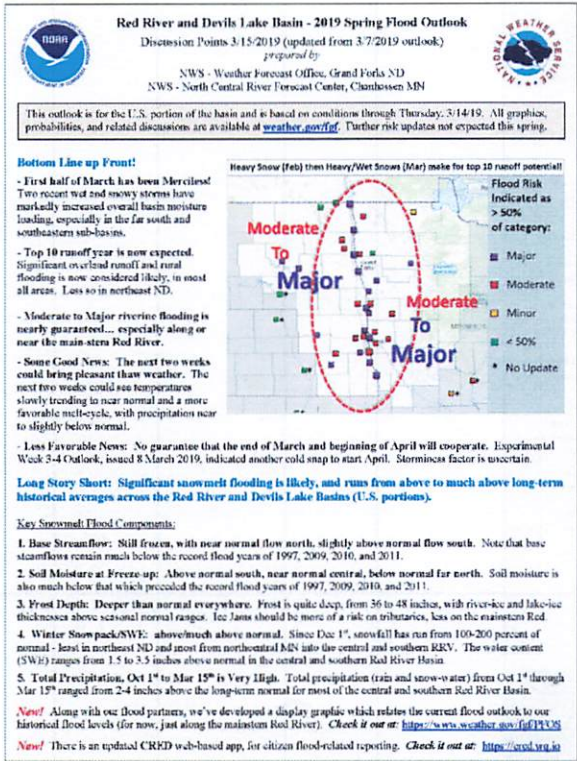

Graphics


Combined text and graphics

Please explain.


I think more information is best.


6. Please rate the weather products discussed today based on their usefulness to you in assessing your flood situation.

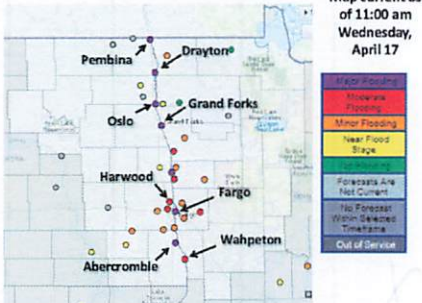
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Spring Flood Outlook</p> 		X			
<p>Snow/rain Forecasts</p> 		X			



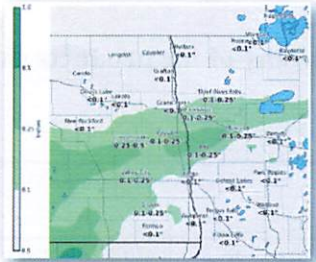
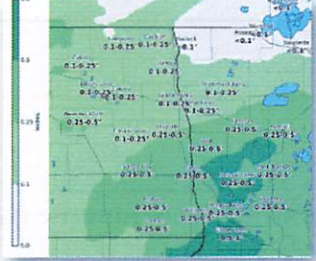
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																																																																																																																																																																																																																																																																								
<p>Long range probabilistic outlook</p> <p>DEVILS LAKE & STUMP LAKE (last updated) <small>Long-range probabilistic outlook Valid March 8, 2019 - September 19, 2019</small></p> <p>LOCATION: 254 264 273 284 294 301 308</p> <p>OSLO: 1049.4 1049.2 1049.0 1049.4 1049.2 1049.7 1049.4</p> <p>HAZARD LAKES: 1449.4 1449.4 1449.7 1449.5 1449.0 1449.7 1449.4</p> <p>The current heights of Devils Lake and Stump Lake are 1449.3 ft. MSL.</p> <p>Color code: Below MINOR Moderate Major Flood of Record</p> <p>RED RIVER AND TRIBUTARIES... <small>Long Range Probabilistic Outlook Valid March 14, 2019 - June 16, 2019</small></p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>254</th> <th>264</th> <th>273</th> <th>284</th> <th>294</th> <th>301</th> <th>308</th> </tr> </thead> <tbody> <tr><td>WABEY</td><td>13.9</td><td>14.1</td><td>14.8</td><td>15.7</td><td>17.0</td><td>18.1</td><td>19.0</td></tr> <tr><td>WABEY</td><td>32.1</td><td>32.8</td><td>33.9</td><td>35.1</td><td>36.1</td><td>37.6</td><td>39.6</td></tr> <tr><td>WABEY</td><td>33.0</td><td>34.9</td><td>36.5</td><td>37.9</td><td>39.9</td><td>40.5</td><td>42.4</td></tr> <tr><td>WABEY</td><td>38.0</td><td>39.8</td><td>39.0</td><td>38.9</td><td>40.0</td><td>40.6</td><td>42.2</td></tr> <tr><td>WABEY</td><td>45.8</td><td>47.5</td><td>49.0</td><td>50.5</td><td>52.7</td><td>54.6</td><td>56.7</td></tr> <tr><td>WABEY</td><td>37.2</td><td>37.9</td><td>37.8</td><td>37.9</td><td>38.0</td><td>38.1</td><td>38.1</td></tr> <tr><td>WABEY</td><td>43.8</td><td>42.4</td><td>43.0</td><td>43.7</td><td>44.6</td><td>45.3</td><td>46.0</td></tr> <tr><td>WABEY</td><td>51.0</td><td>51.9</td><td>52.2</td><td>53.0</td><td>53.7</td><td>54.6</td><td>54.7</td></tr> </tbody> </table> <p>Minnesota Tributaries:</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>254</th> <th>264</th> <th>273</th> <th>284</th> <th>294</th> <th>301</th> <th>308</th> </tr> </thead> <tbody> <tr><td>WABEY</td><td>14.8</td><td>15.0</td><td>15.8</td><td>17.2</td><td>19.6</td><td>20.3</td><td>22.7</td></tr> <tr><td>WABEY</td><td>9.5</td><td>9.8</td><td>10.0</td><td>10.4</td><td>11.2</td><td>11.9</td><td>13.0</td></tr> <tr><td>WABEY</td><td>23.2</td><td>24.9</td><td>22.7</td><td>23.9</td><td>25.1</td><td>26.7</td><td>29.1</td></tr> <tr><td>WABEY</td><td>19.8</td><td>22.0</td><td>22.0</td><td>23.9</td><td>25.6</td><td>27.1</td><td>28.0</td></tr> <tr><td>WABEY</td><td>31.8</td><td>32.0</td><td>32.6</td><td>33.3</td><td>34.0</td><td>35.0</td><td>35.8</td></tr> <tr><td>WABEY</td><td>17.0</td><td>18.0</td><td>20.3</td><td>22.0</td><td>23.9</td><td>24.7</td><td>25.7</td></tr> <tr><td>WABEY</td><td>26.6</td><td>27.9</td><td>29.4</td><td>31.2</td><td>34.1</td><td>37.0</td><td>39.1</td></tr> <tr><td>WABEY</td><td>15.4</td><td>17.7</td><td>15.1</td><td>15.3</td><td>15.5</td><td>15.8</td><td>15.7</td></tr> <tr><td>WABEY</td><td>33.8</td><td>33.9</td><td>34.3</td><td>34.9</td><td>35.5</td><td>36.4</td><td>37.9</td></tr> <tr><td>WABEY</td><td>45.0</td><td>45.7</td><td>45.7</td><td>46.6</td><td>48.1</td><td>49.0</td><td>51.1</td></tr> <tr><td>WABEY</td><td>104.5</td><td>105.0</td><td>106.1</td><td>109.0</td><td>109.1</td><td>110.5</td><td>110.9</td></tr> <tr><td>WABEY</td><td>807.4</td><td>807.7</td><td>808.4</td><td>809.5</td><td>809.9</td><td>811.5</td><td>812.0</td></tr> <tr><td>WABEY</td><td>14.1</td><td>14.8</td><td>15.6</td><td>16.4</td><td>17.7</td><td>19.0</td><td>19.4</td></tr> </tbody> </table> <p>North Dakota Tributaries:</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>254</th> <th>264</th> <th>273</th> <th>284</th> <th>294</th> <th>301</th> <th>308</th> </tr> </thead> <tbody> <tr><td>WABEY</td><td>20.0</td><td>21.9</td><td>23.4</td><td>24.5</td><td>25.6</td><td>26.9</td><td>27.5</td></tr> <tr><td>WABEY</td><td>13.2</td><td>13.0</td><td>14.6</td><td>16.0</td><td>19.8</td><td>21.7</td><td>22.7</td></tr> <tr><td>WABEY</td><td>23.6</td><td>25.3</td><td>26.5</td><td>28.2</td><td>32.4</td><td>35.0</td><td>38.2</td></tr> <tr><td>WABEY</td><td>20.2</td><td>20.9</td><td>21.1</td><td>21.2</td><td>21.3</td><td>21.2</td><td>21.7</td></tr> <tr><td>WABEY</td><td>31.2</td><td>31.9</td><td>31.3</td><td>31.3</td><td>31.3</td><td>31.3</td><td>31.3</td></tr> <tr><td>WABEY</td><td>91.9</td><td>91.9</td><td>92.1</td><td>92.1</td><td>92.2</td><td>92.3</td><td>92.4</td></tr> <tr><td>WABEY</td><td>11.8</td><td>12.1</td><td>12.8</td><td>13.3</td><td>13.6</td><td>14.4</td><td>15.0</td></tr> <tr><td>WABEY</td><td>32.0</td><td>33.9</td><td>32.5</td><td>32.8</td><td>33.2</td><td>34.0</td><td>34.1</td></tr> <tr><td>WABEY</td><td>5.1</td><td>5.4</td><td>5.1</td><td>5.2</td><td>5.4</td><td>5.5</td><td>5.7</td></tr> <tr><td>WABEY</td><td>7.3</td><td>7.8</td><td>8.0</td><td>8.5</td><td>9.6</td><td>9.9</td><td>10.2</td></tr> <tr><td>WABEY</td><td>6.5</td><td>6.1</td><td>6.1</td><td>6.1</td><td>6.1</td><td>6.1</td><td>6.1</td></tr> <tr><td>WABEY</td><td>6.5</td><td>6.1</td><td>6.1</td><td>6.1</td><td>6.1</td><td>6.1</td><td>6.1</td></tr> <tr><td>WABEY</td><td>5.3</td><td>5.3</td><td>5.3</td><td>5.3</td><td>5.3</td><td>5.3</td><td>5.3</td></tr> </tbody> </table> <p>Notes:</p> <ol style="list-style-type: none"> Devils Lake Basin Runoff Risk has not changed much since February. A somewhat above normal rise is expected, from 1 to 2 ft. No update since 7 Mar 2019. Red River Basin Runoff Risk has jumped markedly. All Red River main-stem points will see significantly higher flow, - due to significant snow/SWE loads from 9 Mar and 14 Mar storms, over damp and deep frozen antecedent conditions, especially in the far southern Red River Basin, south of Fargo. Snowpack/SWE and runoff potential has increased in most all MN tributaries. Central and South tris have seen the highest increase in snow and SWE this past week, including the Red Lake River. Roseau River Basin now has a slight increase to just above normal for runoff risk. ND Wild Rice has a quite High Runoff Risk, with much above normal snowpack. Mid to Lower Sheyenne has gained appreciably in snow and SWE. High Red River levels lead to sig. backwater at Harwood. Some snow/SWE increases on Maple and Rush Rivers as well. Slight increase on Park River, else northeast ND saw less overall gains in SWE. 	LOCATION	254	264	273	284	294	301	308	WABEY	13.9	14.1	14.8	15.7	17.0	18.1	19.0	WABEY	32.1	32.8	33.9	35.1	36.1	37.6	39.6	WABEY	33.0	34.9	36.5	37.9	39.9	40.5	42.4	WABEY	38.0	39.8	39.0	38.9	40.0	40.6	42.2	WABEY	45.8	47.5	49.0	50.5	52.7	54.6	56.7	WABEY	37.2	37.9	37.8	37.9	38.0	38.1	38.1	WABEY	43.8	42.4	43.0	43.7	44.6	45.3	46.0	WABEY	51.0	51.9	52.2	53.0	53.7	54.6	54.7	LOCATION	254	264	273	284	294	301	308	WABEY	14.8	15.0	15.8	17.2	19.6	20.3	22.7	WABEY	9.5	9.8	10.0	10.4	11.2	11.9	13.0	WABEY	23.2	24.9	22.7	23.9	25.1	26.7	29.1	WABEY	19.8	22.0	22.0	23.9	25.6	27.1	28.0	WABEY	31.8	32.0	32.6	33.3	34.0	35.0	35.8	WABEY	17.0	18.0	20.3	22.0	23.9	24.7	25.7	WABEY	26.6	27.9	29.4	31.2	34.1	37.0	39.1	WABEY	15.4	17.7	15.1	15.3	15.5	15.8	15.7	WABEY	33.8	33.9	34.3	34.9	35.5	36.4	37.9	WABEY	45.0	45.7	45.7	46.6	48.1	49.0	51.1	WABEY	104.5	105.0	106.1	109.0	109.1	110.5	110.9	WABEY	807.4	807.7	808.4	809.5	809.9	811.5	812.0	WABEY	14.1	14.8	15.6	16.4	17.7	19.0	19.4	LOCATION	254	264	273	284	294	301	308	WABEY	20.0	21.9	23.4	24.5	25.6	26.9	27.5	WABEY	13.2	13.0	14.6	16.0	19.8	21.7	22.7	WABEY	23.6	25.3	26.5	28.2	32.4	35.0	38.2	WABEY	20.2	20.9	21.1	21.2	21.3	21.2	21.7	WABEY	31.2	31.9	31.3	31.3	31.3	31.3	31.3	WABEY	91.9	91.9	92.1	92.1	92.2	92.3	92.4	WABEY	11.8	12.1	12.8	13.3	13.6	14.4	15.0	WABEY	32.0	33.9	32.5	32.8	33.2	34.0	34.1	WABEY	5.1	5.4	5.1	5.2	5.4	5.5	5.7	WABEY	7.3	7.8	8.0	8.5	9.6	9.9	10.2	WABEY	6.5	6.1	6.1	6.1	6.1	6.1	6.1	WABEY	6.5	6.1	6.1	6.1	6.1	6.1	6.1	WABEY	5.3	5.3	5.3	5.3	5.3	5.3	5.3					
LOCATION	254	264	273	284	294	301	308																																																																																																																																																																																																																																																																																																						
WABEY	13.9	14.1	14.8	15.7	17.0	18.1	19.0																																																																																																																																																																																																																																																																																																						
WABEY	32.1	32.8	33.9	35.1	36.1	37.6	39.6																																																																																																																																																																																																																																																																																																						
WABEY	33.0	34.9	36.5	37.9	39.9	40.5	42.4																																																																																																																																																																																																																																																																																																						
WABEY	38.0	39.8	39.0	38.9	40.0	40.6	42.2																																																																																																																																																																																																																																																																																																						
WABEY	45.8	47.5	49.0	50.5	52.7	54.6	56.7																																																																																																																																																																																																																																																																																																						
WABEY	37.2	37.9	37.8	37.9	38.0	38.1	38.1																																																																																																																																																																																																																																																																																																						
WABEY	43.8	42.4	43.0	43.7	44.6	45.3	46.0																																																																																																																																																																																																																																																																																																						
WABEY	51.0	51.9	52.2	53.0	53.7	54.6	54.7																																																																																																																																																																																																																																																																																																						
LOCATION	254	264	273	284	294	301	308																																																																																																																																																																																																																																																																																																						
WABEY	14.8	15.0	15.8	17.2	19.6	20.3	22.7																																																																																																																																																																																																																																																																																																						
WABEY	9.5	9.8	10.0	10.4	11.2	11.9	13.0																																																																																																																																																																																																																																																																																																						
WABEY	23.2	24.9	22.7	23.9	25.1	26.7	29.1																																																																																																																																																																																																																																																																																																						
WABEY	19.8	22.0	22.0	23.9	25.6	27.1	28.0																																																																																																																																																																																																																																																																																																						
WABEY	31.8	32.0	32.6	33.3	34.0	35.0	35.8																																																																																																																																																																																																																																																																																																						
WABEY	17.0	18.0	20.3	22.0	23.9	24.7	25.7																																																																																																																																																																																																																																																																																																						
WABEY	26.6	27.9	29.4	31.2	34.1	37.0	39.1																																																																																																																																																																																																																																																																																																						
WABEY	15.4	17.7	15.1	15.3	15.5	15.8	15.7																																																																																																																																																																																																																																																																																																						
WABEY	33.8	33.9	34.3	34.9	35.5	36.4	37.9																																																																																																																																																																																																																																																																																																						
WABEY	45.0	45.7	45.7	46.6	48.1	49.0	51.1																																																																																																																																																																																																																																																																																																						
WABEY	104.5	105.0	106.1	109.0	109.1	110.5	110.9																																																																																																																																																																																																																																																																																																						
WABEY	807.4	807.7	808.4	809.5	809.9	811.5	812.0																																																																																																																																																																																																																																																																																																						
WABEY	14.1	14.8	15.6	16.4	17.7	19.0	19.4																																																																																																																																																																																																																																																																																																						
LOCATION	254	264	273	284	294	301	308																																																																																																																																																																																																																																																																																																						
WABEY	20.0	21.9	23.4	24.5	25.6	26.9	27.5																																																																																																																																																																																																																																																																																																						
WABEY	13.2	13.0	14.6	16.0	19.8	21.7	22.7																																																																																																																																																																																																																																																																																																						
WABEY	23.6	25.3	26.5	28.2	32.4	35.0	38.2																																																																																																																																																																																																																																																																																																						
WABEY	20.2	20.9	21.1	21.2	21.3	21.2	21.7																																																																																																																																																																																																																																																																																																						
WABEY	31.2	31.9	31.3	31.3	31.3	31.3	31.3																																																																																																																																																																																																																																																																																																						
WABEY	91.9	91.9	92.1	92.1	92.2	92.3	92.4																																																																																																																																																																																																																																																																																																						
WABEY	11.8	12.1	12.8	13.3	13.6	14.4	15.0																																																																																																																																																																																																																																																																																																						
WABEY	32.0	33.9	32.5	32.8	33.2	34.0	34.1																																																																																																																																																																																																																																																																																																						
WABEY	5.1	5.4	5.1	5.2	5.4	5.5	5.7																																																																																																																																																																																																																																																																																																						
WABEY	7.3	7.8	8.0	8.5	9.6	9.9	10.2																																																																																																																																																																																																																																																																																																						
WABEY	6.5	6.1	6.1	6.1	6.1	6.1	6.1																																																																																																																																																																																																																																																																																																						
WABEY	6.5	6.1	6.1	6.1	6.1	6.1	6.1																																																																																																																																																																																																																																																																																																						
WABEY	5.3	5.3	5.3	5.3	5.3	5.3	5.3																																																																																																																																																																																																																																																																																																						
<p>Flood risk</p> <p>2019 Spring Flood Outlook <small>Weather Forecast Office Grand Forks, ND Issued March 19, 2019 11:49 AM EDT</small></p> <p>Above Normal Flood Risk Continues</p>  <p>Significant Snowmelt Flooding Expected</p> <ul style="list-style-type: none"> The threat for significant snowmelt flooding continues to be above normal throughout the Red River Basin Major flooding is expected along the mainstem Red River with moderate to major flooding on the tributaries Future temperatures and precipitation (snow + rain) will have a big impact on flood potential The later the snowmelt gets, the more the risk for rapid and/or rainfall enhanced runoff increases Stay tuned for updated information as we get closer to the spring melt 																																																																																																																																																																																																																																																																																																													







	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Percent chance of exceedance</p> <p>2019 Spring Flood Outlook for Red River at Drayton Valid 03-18-2019 through 06-16-2019 % Chance of reaching or exceeding this level</p>					
<p>Hydrologic Outlook/Thaw Updates</p> <p>Hydrologic Outlook/Thaw Updates</p> <ul style="list-style-type: none"> Monday, March 18th <ul style="list-style-type: none"> Favorable melt conditions to persist Daytime temperatures warming into the 40s and 50s will help ripen the snowpack, but low temperatures dipping back below freezing will keep water from entering the river system No major weather systems expected for the next week Thursday, March 21st <ul style="list-style-type: none"> Favorable melt conditions to persist Temperatures above freezing during the day and below freezing at night will start to create some ponding and water moving into local drainage Full blown river flooding and extensive overland flooding not expected to begin through at least early next week March 15th outlook remains valid as recent temperature and precipitation pattern has been accounted for 					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Flood Warning 376 WGUS43 KFGF 271441 FLWFGF BULLETIN - IMMEDIATE BROADCAST REQUESTED Flood Warning National Weather Service Eastern North Dakota/Grand Forks ND 941 AM CDT Wed Mar 27 2019</p> <p>...The National Weather Service in Grand Forks, ND has issued a flood warning (new) for these river locations in Minnesota...North Dakota...</p> <p>new flooding is forecast to occur at... * Wahpeton...on the Red River...in Wilkin and Richland Counties.</p> <p>. A combination of reservoir outflows and localized snowmelt is causing the Wahpeton stage to slowly rise.</p> <p>Forecast temperatures show continued above freezing temperatures over the next 24 hours, followed by cooler temperatures March 29 through 31 More snowmelt is expected today.</p> <p>Below freezing forecast temperatures during March 30-31 should temporarily shut down the melt.</p> <p>A more typical springtime temperature regime, with daytime highs above freezing, and nighttime lows below freezing, is currently forecast for the first week of April. This would result in an ideal slow snowmelt pattern during that time.</p> <p>The current stage is affected by 1 to 2 feet of ice.</p> <p>*** A follow-up flood statement with more detailed flooding information will be issued shortly. ***</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-271541- /O.NEW.KFGF.FL.W.0001.190329T0600Z-190402T1200Z/ /WHNN8.1.SM.190329T0600Z.190330T1200Z.190401T0600Z.NO/ 941 AM CDT Wed Mar 27 2019</p> <p>The National Weather Service in Grand Forks, ND has issued a new Flood Warning for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River * from late Thursday night to Tuesday morning. * At 8:30 AM Wednesday the stage was 10.2 feet. * Minor Flood Stage is 11.0 feet. * For the next 7 days...Minor flooding is forecast. * Forecast...rise above Flood Stage by early Friday morning and continue to rise to near 11.5 feet by Saturday mid-morning. The river will fall below Flood Stage by early Monday morning. <p>&&</p> <p>LAT...LON 4650 9684 4650 9663 4603 9641 4602 9672</p> <p>\$\$</p> <p>HydroTeam FGF</p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful									
<p>Flood statement 713 WGUS83 KFGF 171652 FLSFGF Flood Statement National Weather Service Eastern North Dakota/Grand Forks ND 1152 AM CDT Wed Apr 17 2019</p> <p>...The flood warning is now cancelled for these river locations in Minnesota...</p> <ul style="list-style-type: none"> * Alvarado...on the Snake River...in Marshall County <p>...The flood warning has been extended for these river locations in North Dakota...Minnesota...</p> <ul style="list-style-type: none"> * Hickson...on the Red River...in Cass County * Sabin...on the South Branch Buffalo River...in Clay County * Hawley...on the Buffalo River...in Clay County * Enderlin...on the Maple River...in Cass and Ransom Counties <p>...The flood warning continues for these river locations in Minnesota...North Dakota...</p> <ul style="list-style-type: none"> * Wahpeton...on the Red River ...in Wilkin and Richland Counties * Fargo...on the Red River ...in Clay and Cass Counties * Halstad...on the Red River ...in Norman and Traill Counties * East Grand Forks...on the Red River ...in Polk and Grand Forks Counties * Oslo...on the Red River ...in Marshall...Polk...Grand Forks and Walsh Counties * Drayton...on the Red River ...in Kittson...Marshall...Pembina and Walsh Counties * Pembina...on the Red River ...in Kittson and Pembina Counties * Dilworth...on the Buffalo River ...in Clay County * Twin Valley...on the Wild Rice River (MN) ...in Norman County * Hendrum...on the Wild Rice River (MN) ...in Norman County * Shelly...on the Marsh River ...in Norman County * Climax...on the Sandhill River ...in Polk County * Crookston...on the Red Lake River ...in Polk County * Hallock...on the Two Rivers River ...in Kittson County * Abercrombie...on the Wild Rice River (ND) ...in Richland County * Kindred...on the Sheyenne River ...in Cass and Richland Counties * West Fargo Diversion...on the Sheyenne River ...in Cass County * Harwood...on the Sheyenne River ...in Cass County * Mapleton...on the Maple River ...in Cass County <p>.This forecast is for a 7-day period...the highest stage indicated may not reflect the crest for this event.</p> <p>Forecasts are updated daily and stage values will change as new weather and river information is used.</p> <p>River forecasts use 24 hours of forecast precipitation. However, depending on the situation, they may include precipitation expected through the next 72 hours.</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHP5/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-181653- /O.CON.KFGF.FL.W.0001.000000T0000Z-000000T0000Z/ /WHNNB.2.SM.190328T0937Z.190401T1115Z.000000T0000Z.NO/ 1152 AM CDT Wed Apr 17 2019</p> <p>The Flood Warning continues for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River. * until further notice...or until the warning is cancelled. * At 10:30 AM Wednesday the stage was 12.9 feet. * Minor flooding is occurring and during the next 7 days...Moderate flooding is forecast. * Moderate Flood Stage is 13.0 feet. * The river is forecast to crest at 14.5 (give or take one foot) on Sunday morning. * Reservoir outflows upstream are being lessened by the USACE. * Impact Statement(s) - At 15.0 feet, MAJOR FLOOD. Wahpeton storm sewer outlets and Main Street closed. <p>&&</p> <p>Daily 7am CDT/6am CST forecast stage in feet:</p> <table border="1"> <thead> <tr> <th>Date (month/day)</th> <th>Thu 04/18</th> <th>Fri 04/19</th> <th>Sat 04/20</th> <th>Sun 04/21</th> <th>Mon 04/22</th> <th>Tue 04/23</th> <th>Wed 04/24</th> </tr> </thead> <tbody> <tr> <td>...</td></tr> </tbody> </table> <p>...truncated 784 lines...</p>	Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24	...					
Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24							
...														

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation Report – Map of forecast points</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Map of Flood Forecast Points</p>  <p>Map current as of 11:00 am Wednesday, April 17</p> <p>Check here for the latest river forecasts</p> <p>Message of the Day:</p> <ul style="list-style-type: none"> Initial crest: rising river levels continue on the Red River near and north of Drayton. Secondary crest: secondary rises ongoing due to snowmelt/rainfall. Secondary crests should be lower than first for most locations (except possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks). Overland flooding continues along and near the Red River. <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>	X				
<p>Situation Report - Impacts</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Potential Impacts:</p> <ul style="list-style-type: none"> Snow melt from last week's winter storm continues to cause secondary rises in rivers and tributaries. This snowmelt and ongoing rainfall will also serve to lengthen duration of high water. <ul style="list-style-type: none"> Secondary crest not expected to be higher than previous crest for most locations, with the exception of possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks. Several roads (including I-29) continue to be impacted due to overland and river flooding, especially near the Red River. Backwater is still affecting many locations on the tributaries while few ice impacts remain. Continue to pay attention to closures and notices from local authorities. <p>River Basins Potentially Impacted:</p> <ul style="list-style-type: none"> Initial flood crest: <ul style="list-style-type: none"> The Red River at Drayton is nearing crest while levels continue to rise at Pembina. Secondary flood crest: <ul style="list-style-type: none"> Most locations across the southern portion of the basin are beginning their secondary rise. Backwater from the main stem Red River will continue to keep water levels high, especially between Fargo/Moorhead and the international border. <p>How to Monitor River Levels and Forecasts:</p> <ul style="list-style-type: none"> NWS River Observation/Forecast Page NWS Grand Forks Flood Briefing Page <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>	X				

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																	
<p>Situation Report – Temp and Precip Outlook</p> <p> National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p style="background-color: yellow; text-align: center;">Moderate-Major Flooding Continues</p> <p style="text-align: center;">Temperature Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Highs</th> <th>Lows (Overnight)</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>46-51</td> <td>35-38</td> </tr> <tr> <td>Thursday, April 18</td> <td>52-56</td> <td>31-34</td> </tr> <tr> <td>Friday, April 19</td> <td>59-65</td> <td>41-46</td> </tr> <tr> <td>Saturday, April 20</td> <td>56-66</td> <td>35-40</td> </tr> <tr> <td>Sunday, April 21</td> <td>52-57</td> <td>31-36</td> </tr> <tr> <td>Monday, April 22</td> <td>50-57</td> <td>32-37</td> </tr> </tbody> </table> <p style="text-align: center;">Precipitation Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Type</th> <th>Liquid Amounts</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>Rain and Snow</td> <td>0"-0.50"</td> <td>Mainly southern RRV</td> </tr> <tr> <td>Thursday, April 18</td> <td>Showers/Thunder</td> <td>0"-0.10"</td> <td>Eastern ND/NW MN</td> </tr> <tr> <td>Friday, April 19</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Saturday, April 20</td> <td>Showers</td> <td>0"-0.20"</td> <td>Along/north Hwy 2</td> </tr> <tr> <td>Sunday, April 21</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Monday, April 22</td> <td>None</td> <td>0"</td> <td></td> </tr> </tbody> </table> <p>Click for a description of this product Click to evaluate this product</p>	Day of the Week	Highs	Lows (Overnight)	Wednesday, April 17	46-51	35-38	Thursday, April 18	52-56	31-34	Friday, April 19	59-65	41-46	Saturday, April 20	56-66	35-40	Sunday, April 21	52-57	31-36	Monday, April 22	50-57	32-37	Day of the Week	Type	Liquid Amounts	Location	Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV	Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN	Friday, April 19	None	0"		Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2	Sunday, April 21	None	0"		Monday, April 22	None	0"		α				
Day of the Week	Highs	Lows (Overnight)																																																				
Wednesday, April 17	46-51	35-38																																																				
Thursday, April 18	52-56	31-34																																																				
Friday, April 19	59-65	41-46																																																				
Saturday, April 20	56-66	35-40																																																				
Sunday, April 21	52-57	31-36																																																				
Monday, April 22	50-57	32-37																																																				
Day of the Week	Type	Liquid Amounts	Location																																																			
Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV																																																			
Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN																																																			
Friday, April 19	None	0"																																																				
Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2																																																			
Sunday, April 21	None	0"																																																				
Monday, April 22	None	0"																																																				
<p>Situation report – 24 hour precipitation</p> <p> National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p style="background-color: yellow; text-align: center;">Moderate-Major Flooding Continues</p> <div style="display: flex; flex-direction: column; align-items: flex-start;"> <div style="margin-bottom: 20px;"> <p>Precipitation over the last 24 hours in the River Forecasts (7 am Tue to 7 am Wed)</p>  </div> <div> <p>24 hour forecast precipitation in the River Forecasts (7 am Wed to 7 am Thu)</p>  </div> </div> <p>Click for a description of this product Click to evaluate this product</p>	α																																																					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation report – Message of the Day</p>  <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Message of the Day: Widespread river flooding and localized overland flooding continues. Red River continues to rise near and north of Drayton while southern portions of the valley are seeing re-rises due to snowmelt and ongoing rainfall.</p>   <p>Water on Demers Ave near the Sorlie Bridge in East Grand Forks MN on 4/12/19. Photo courtesy of Carl Jones.</p> <p>Quick facts you should know about flooding:</p> <ul style="list-style-type: none"> Flooding can be caused by heavy rain, rapid snow melt, ice jamming, levee overtopping, dam failure, or from wastewater systems. It only takes 6 inches of fast-moving water to knock you off your feet. A car can be moved in as little as 2 feet of water. 90% of all U.S. natural disasters declared by the President involve flooding. <p>Preparedness:</p> <p>Know your risk: Are you in a flood-prone area? Know your zone: www.fema.gov/flood-zones</p> <ul style="list-style-type: none"> You must purchase separate flood insurance for your home. There is a 30 day wait period between when you buy a flood insurance policy and when it goes into effect. Plan ahead! A Flood Watch is issued when conditions are favorable for flooding. Time to prepare! A Flood Warning is issued when flooding is imminent or occurring. Time to act! <p>Never drive into flood waters! Turn around, don't drown!</p> <p>Find out more information on our web page: www.weather.gov/fgt/</p> <p>Follow us on Facebook and Twitter for more up to date information:</p> <p> @NWSGrandForks  @NWSGrandForks</p> <p> Building a Weather-Ready Nation</p> <p>Click for a description of this product Click to evaluate this product</p>	X				

7. What changes might you recommend for any of the products shown?

None

8. Which media would you use to find NWS information about the risk of flooding near you? Please circle all that apply:

Facebook

Twitter

Internet

Other: Weather Radio

9. Which digital platform are you most likely to use to access NWS resources? Circle one.

Smartphone

Tablet

Laptop

Desktop

Other: _____

10. Was anything in the session confusing?

Yes

No

If Yes, please explain:

11. What improvements could be made in the format or content of this session?

Very good presentation.

12. Additional comments:

Thank you for coming.

Thank you for participating!

Survey Questions - Post-Focus Group Session Survey

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0690-0030. Without this approval, we could not conduct this post-focus group survey collection. Public reporting for this information collection is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Nurture Nature Center at: 518 Northampton Street, Easton, PA 18042, Attn: Rachel Hogan Carr, Executive Director, rhogan@nurturenature.org.

1. Please rate your agreement with the following statements about the forum.

Please check ONE box for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The information was clearly presented.		✓			
I felt comfortable voicing my opinion.	✓				
I know more about the National Weather Service (NWS) resources.			✓		
I feel I could use NWS resources to judge my risk in an extreme weather event.					

2. What are the biggest barriers you face in using NWS flood forecast and warning products? Some examples to consider are lack of computer or phone, lack of internet access, language barriers, NWS products too difficult to understand, or other factors.

No internet access at, need to use the library; they don't really have risk assessment, so hard to understand from the data what impacts to prepare for

3. Our goal today was to gather feedback to improve NWS flood forecast and warning tools. Beyond the questions asked today, what else would be important to know about how you gather/would use NWS information about extreme weather risks and your intended actions?

Risk assessment, like what is given
for earthquakes or hurricanes, etc., or
other hazards

4. After attending today's session, how likely are you to:

Please check ONE box for each statement.

	Very Likely	Somewhat Likely	Neither likely nor unlikely	Somewhat Unlikely	Unlikely
Create or revise plans to deal with extreme weather events using NWS products.	✓				
Share what I learned about NWS products today with others.	✓				
Seek NWS information about extreme weather risks.	✓				
Use NWS products and information in your decision-making	✓				

5. Do you prefer text-based or graphical/visual NWS products in trying to understand your level of risk from flooding? Circle one.

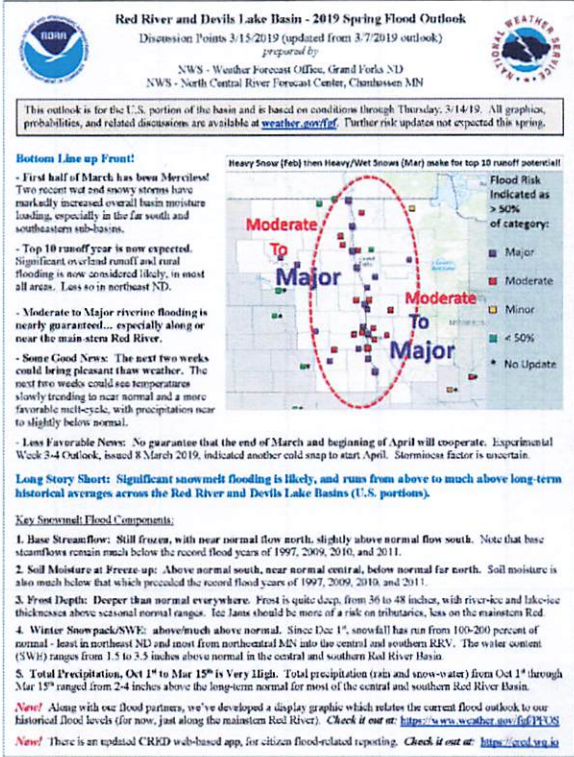
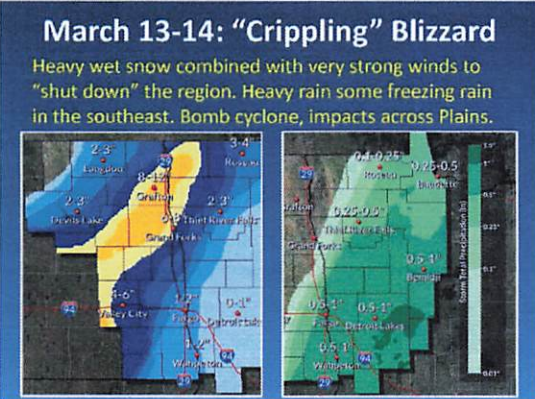
Text

Graphics

Combined text and graphics


Please explain. maps, legends
explanations of the data
in a graph

6. Please rate the weather products discussed today based on their usefulness to you in assessing your flood situation.

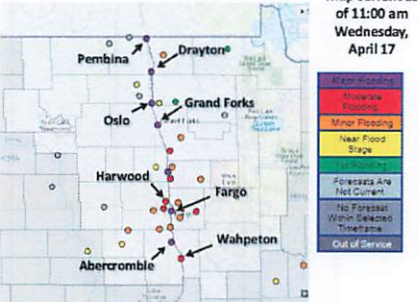
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Spring Flood Outlook</p>  <p>Red River and Devils Lake Basin - 2019 Spring Flood Outlook Discussion Points 3/15-2019 (updated from 3/7/2019 outlook) prepared by: NWS - Weather Forecast Office, Grand Forks, ND NWS - North Central River Forecast Center, Chanhassen, MN</p> <p>This outlook is for the U.S. portion of the basin and is based on conditions through Thursday, 3/14/19. All graphics, probabilities, and related discussions are available at weather.gov/flo. Further risk updates not expected this spring.</p> <p>Bottom Line up Front! - First half of March has been Merciless! Two recent wet and snowy storms have markedly increased overall basin moisture loading, especially in the far south and southeastern sub-basins. - Top 10 runoff year is now expected. Significant on or end runoff and rural flooding is now considered likely, in most all areas. Less so in northeast ND. - Moderate to Major riverine flooding is nearly guaranteed... especially along or near the main stem Red River. - Some Good News: The next two weeks could bring pleasant flow weather. The next two weeks could see temperatures slowly trending to near normal and a more favorable melt-cycle, with precipitations near to slightly below normal. - Less Favorable News: No guarantee that the end of March and beginning of April will cooperate. Experimental Week 3-4 Outlook, issued 8 March 2019, indicated another cold snap to start April. Storminess factor is uncertain.</p> <p>Long Story Short: Significant snowmelt flooding is likely, and runs from above to much above long-term historical averages across the Red River and Devils Lake basins (U.S. portions).</p> <p>Key Snowmelt Flood Components: 1. Base Streamflow: Still frozen, with near normal flow north, slightly above normal flow south. Note that base streamflows remain much below the record flood years of 1997, 2009, 2010, and 2011. 2. Soil Moisture at Freeze-up: Above normal south, near normal central, below normal for north. Soil moisture is also much below that which preceeded the record flood years of 1997, 2009, 2010, and 2011. 3. Frost Depth: Deeper than normal everywhere. Frost is quite deep, from 36 to 48 inches, with river-ice and lake-ice thickness above seasonal normal ranges. Ice jams should be more of a risk on tributaries, less on the mainstem Red. 4. Winter Snowpack/SWE: above/much above normal. Since Dec 1st, snowfall has run from 100-200 percent of normal - least in northeast ND and most from north-central MN into the central and southern RRV. The water content (SWE) ranges from 1.5 to 3.5 inches above normal in the central and southern Red River Basin. 5. Total Precipitation: Oct 1st to Mar 15th is Very High. Total precipitation (rain and snow-water) from Oct 1st through Mar 15th ranged from 2-4 inches above the long-term normal for most of the central and southern Red River Basin.</p> <p>New! Along with our flood partners, we've developed a display graphic which relates the current flood outlook to our historical flood levels (for now, just along the mainstem Red River). Check it out at: https://www.weather.gov/flo/FXUS New! There is an updated CRFD web-based app, for citizen flood-related reporting. Check it out at: https://cfdl.gov</p>			X		
<p>Snow/rain Forecasts</p>  <p>March 13-14: "Crippling" Blizzard Heavy wet snow combined with very strong winds to "shut down" the region. Heavy rain some freezing rain in the southeast. Bomb cyclone, impacts across Plains.</p>		X			

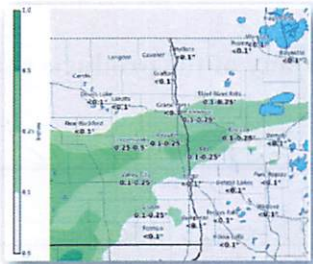
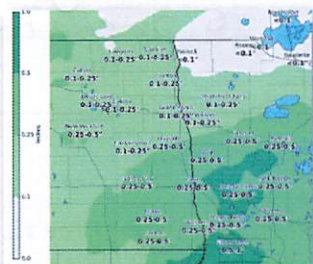
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																																																																																																																																																																																																																																																																								
<p>Long range probabilistic outlook</p> <p>DEVILS LAKE & STUMP LAKE... Long-Range Probabilistic Outlook <small>(last updated)</small> Valid: March 1, 2017 - September 30, 2019</p> <table border="1"> <tr> <td>LOCATION</td> <td>954</td> <td>204</td> <td>708</td> <td>951</td> <td>234</td> <td>101</td> <td>604</td> </tr> <tr> <td>WATER YEAR</td> <td>1449.1</td> <td>1419.7</td> <td>1449.0</td> <td>1449.0</td> <td>1459.3</td> <td>1460.7</td> <td>1451.4</td> </tr> <tr> <td>RAIL YIELD (LAK)</td> <td>1449.1</td> <td>1449.2</td> <td>1449.2</td> <td>1449.2</td> <td>1452.0</td> <td>1451.1</td> <td>1451.4</td> </tr> </table> <p>The current height of Devils Lake and Stump Lake are 1449.2 ft. MSL.</p> <p>Color code: Below Normal, Minor, Moderate, Major, Flood of Record</p> <p>RED RIVER AND TRIBUTARIES... Long-Range Probabilistic Outlook <small>(last updated)</small> Valid: March 1, 2015 - June 10, 2019</p> <table border="1"> <tr> <td>LOCATION</td> <td>958</td> <td>991</td> <td>755</td> <td>363</td> <td>156</td> <td>103</td> <td>658</td> </tr> <tr> <td>WATER YEAR</td> <td>13.9</td> <td>14.1</td> <td>14.8</td> <td>15.7</td> <td>17.0</td> <td>18.1</td> <td>19.0</td> </tr> <tr> <td>RAIL YIELD (LAK)</td> <td>13.1</td> <td>12.8</td> <td>13.9</td> <td>15.1</td> <td>16.1</td> <td>17.6</td> <td>18.6</td> </tr> <tr> <td>RAIL YIELD (LAK)</td> <td>13.0</td> <td>12.9</td> <td>13.0</td> <td>13.5</td> <td>14.0</td> <td>14.6</td> <td>15.2</td> </tr> <tr> <td>RAIL YIELD (LAK)</td> <td>15.0</td> <td>15.5</td> <td>16.0</td> <td>16.5</td> <td>17.0</td> <td>17.5</td> <td>18.0</td> </tr> <tr> <td>RAIL YIELD (LAK)</td> <td>17.2</td> <td>17.5</td> <td>17.8</td> <td>18.0</td> <td>18.0</td> <td>18.1</td> <td>18.1</td> </tr> <tr> <td>RAIL YIELD (LAK)</td> <td>41.0</td> <td>43.4</td> <td>43.0</td> <td>43.7</td> <td>44.8</td> <td>45.3</td> <td>46.0</td> </tr> <tr> <td>RAIL YIELD (LAK)</td> <td>51.0</td> <td>51.7</td> <td>52.2</td> <td>53.0</td> <td>53.7</td> <td>54.5</td> <td>54.7</td> </tr> </table> <p>Minnesota Tributaries:</p> <table border="1"> <tr> <td>JAMES HORN BASSIN</td> <td>14.0</td> <td>15.0</td> <td>15.8</td> <td>17.2</td> <td>18.6</td> <td>20.3</td> <td>22.7</td> </tr> <tr> <td>JAMES HORN</td> <td>9.5</td> <td>9.8</td> <td>10.0</td> <td>10.4</td> <td>11.2</td> <td>11.9</td> <td>13.0</td> </tr> <tr> <td>DEWIND</td> <td>21.2</td> <td>21.8</td> <td>22.7</td> <td>23.9</td> <td>25.1</td> <td>26.7</td> <td>28.1</td> </tr> <tr> <td>WILD RICE</td> <td>10.8</td> <td>12.0</td> <td>12.8</td> <td>13.9</td> <td>15.6</td> <td>17.1</td> <td>18.0</td> </tr> <tr> <td>SHENYEN</td> <td>31.8</td> <td>33.0</td> <td>32.6</td> <td>33.3</td> <td>34.0</td> <td>35.0</td> <td>35.6</td> </tr> <tr> <td>ROSEAU</td> <td>17.0</td> <td>18.0</td> <td>20.3</td> <td>22.0</td> <td>23.9</td> <td>24.7</td> <td>25.7</td> </tr> <tr> <td>ROSEAU HILL</td> <td>26.6</td> <td>27.9</td> <td>29.4</td> <td>31.2</td> <td>34.4</td> <td>37.0</td> <td>39.1</td> </tr> <tr> <td>WILD RICE</td> <td>13.4</td> <td>13.7</td> <td>13.1</td> <td>13.3</td> <td>13.5</td> <td>13.6</td> <td>13.7</td> </tr> <tr> <td>ROSEAU</td> <td>31.8</td> <td>33.0</td> <td>32.6</td> <td>33.3</td> <td>34.0</td> <td>35.0</td> <td>35.6</td> </tr> <tr> <td>ROSEAU</td> <td>45.0</td> <td>46.7</td> <td>45.7</td> <td>46.8</td> <td>48.1</td> <td>49.0</td> <td>50.1</td> </tr> <tr> <td>ROSEAU</td> <td>104.0</td> <td>105.0</td> <td>108.1</td> <td>109.0</td> <td>109.1</td> <td>110.3</td> <td>110.9</td> </tr> <tr> <td>ROSEAU</td> <td>807.4</td> <td>807.7</td> <td>808.4</td> <td>809.5</td> <td>809.9</td> <td>812.5</td> <td>812.0</td> </tr> <tr> <td>ROSEAU</td> <td>14.1</td> <td>14.0</td> <td>14.0</td> <td>14.8</td> <td>17.7</td> <td>18.9</td> <td>19.4</td> </tr> </table> <p>North Dakota Tributaries:</p> <table border="1"> <tr> <td>WILD RICE</td> <td>20.0</td> <td>21.9</td> <td>23.4</td> <td>24.0</td> <td>25.6</td> <td>26.9</td> <td>27.0</td> </tr> <tr> <td>SHENYEN</td> <td>15.2</td> <td>15.3</td> <td>16.6</td> <td>18.0</td> <td>19.6</td> <td>21.7</td> <td>22.7</td> </tr> <tr> <td>SHENYEN</td> <td>19.6</td> <td>19.8</td> <td>19.3</td> <td>20.5</td> <td>22.4</td> <td>25.0</td> <td>25.2</td> </tr> <tr> <td>SHENYEN</td> <td>20.2</td> <td>20.8</td> <td>21.1</td> <td>21.2</td> <td>21.2</td> <td>21.2</td> <td>21.2</td> </tr> <tr> <td>WILD RICE</td> <td>21.2</td> <td>21.3</td> <td>21.3</td> <td>21.3</td> <td>21.3</td> <td>21.3</td> <td>21.3</td> </tr> <tr> <td>SHENYEN</td> <td>31.8</td> <td>31.9</td> <td>32.1</td> <td>32.1</td> <td>32.2</td> <td>32.3</td> <td>32.4</td> </tr> <tr> <td>WILD RICE</td> <td>11.0</td> <td>12.1</td> <td>12.8</td> <td>13.3</td> <td>13.6</td> <td>14.4</td> <td>15.0</td> </tr> <tr> <td>ROSEAU</td> <td>32.0</td> <td>32.9</td> <td>32.0</td> <td>32.8</td> <td>33.2</td> <td>34.0</td> <td>34.1</td> </tr> <tr> <td>ROSEAU</td> <td>9.1</td> <td>9.4</td> <td>10.1</td> <td>11.0</td> <td>11.6</td> <td>12.5</td> <td>13.9</td> </tr> <tr> <td>ROSEAU</td> <td>7.3</td> <td>7.8</td> <td>8.0</td> <td>8.5</td> <td>9.6</td> <td>9.9</td> <td>10.2</td> </tr> <tr> <td>ROSEAU</td> <td>6.0</td> <td>1.6</td> <td>17.1</td> <td>14.3</td> <td>16.1</td> <td>17.9</td> <td>19.4</td> </tr> <tr> <td>ROSEAU</td> <td>4.8</td> <td>4.1</td> <td>4.0</td> <td>4.5</td> <td>4.7</td> <td>4.9</td> <td>5.0</td> </tr> <tr> <td>ROSEAU</td> <td>6.3</td> <td>10.6</td> <td>11.7</td> <td>12.0</td> <td>14.0</td> <td>20.5</td> <td>21.2</td> </tr> </table> <p>Notes:</p> <ol style="list-style-type: none"> Devils Lake Basin Runoff Risk has not changed much since February. A somewhat above normal rise is expected, from 1 to 2 ft. No update since 7 Mar 2019. Note: Devils Lake is currently about 1.5 feet lower than this time last year. Red River Basin Runoff Risk has jumped markedly. All Red River main-stem points will see significantly higher flows. - due to significant snow/SWE loads from 9 Mar and 14 Mar storms, over damp and deep frozen antecedent conditions, especially in the far southern Red River Basin, south of Fargo; - coupled with much increased runoff potential from the MNI tributaries, and Red Lake River Basin. Snowpack/SWE and runoff potential has increased in most all MNI tributaries. Central and South tribes have seen the highest increase in snow and SWE this past week, including the Red Lake River. Roseau River Basin now has a slight increase to just above normal for runoff risk. ND Wild Rice has a quite High Runoff Risk, with much above normal snowpack. Mid to lower Shenyenne has gained appreciably in snow and SWE. High Red River levels lead to sig. backwater at Harwood. Some snow/SWE increases on Maple and Rush Rivers as well. Slight increase on Park River, else northeast ND saw least overall gains in SWE. 	LOCATION	954	204	708	951	234	101	604	WATER YEAR	1449.1	1419.7	1449.0	1449.0	1459.3	1460.7	1451.4	RAIL YIELD (LAK)	1449.1	1449.2	1449.2	1449.2	1452.0	1451.1	1451.4	LOCATION	958	991	755	363	156	103	658	WATER YEAR	13.9	14.1	14.8	15.7	17.0	18.1	19.0	RAIL YIELD (LAK)	13.1	12.8	13.9	15.1	16.1	17.6	18.6	RAIL YIELD (LAK)	13.0	12.9	13.0	13.5	14.0	14.6	15.2	RAIL YIELD (LAK)	15.0	15.5	16.0	16.5	17.0	17.5	18.0	RAIL YIELD (LAK)	17.2	17.5	17.8	18.0	18.0	18.1	18.1	RAIL YIELD (LAK)	41.0	43.4	43.0	43.7	44.8	45.3	46.0	RAIL YIELD (LAK)	51.0	51.7	52.2	53.0	53.7	54.5	54.7	JAMES HORN BASSIN	14.0	15.0	15.8	17.2	18.6	20.3	22.7	JAMES HORN	9.5	9.8	10.0	10.4	11.2	11.9	13.0	DEWIND	21.2	21.8	22.7	23.9	25.1	26.7	28.1	WILD RICE	10.8	12.0	12.8	13.9	15.6	17.1	18.0	SHENYEN	31.8	33.0	32.6	33.3	34.0	35.0	35.6	ROSEAU	17.0	18.0	20.3	22.0	23.9	24.7	25.7	ROSEAU HILL	26.6	27.9	29.4	31.2	34.4	37.0	39.1	WILD RICE	13.4	13.7	13.1	13.3	13.5	13.6	13.7	ROSEAU	31.8	33.0	32.6	33.3	34.0	35.0	35.6	ROSEAU	45.0	46.7	45.7	46.8	48.1	49.0	50.1	ROSEAU	104.0	105.0	108.1	109.0	109.1	110.3	110.9	ROSEAU	807.4	807.7	808.4	809.5	809.9	812.5	812.0	ROSEAU	14.1	14.0	14.0	14.8	17.7	18.9	19.4	WILD RICE	20.0	21.9	23.4	24.0	25.6	26.9	27.0	SHENYEN	15.2	15.3	16.6	18.0	19.6	21.7	22.7	SHENYEN	19.6	19.8	19.3	20.5	22.4	25.0	25.2	SHENYEN	20.2	20.8	21.1	21.2	21.2	21.2	21.2	WILD RICE	21.2	21.3	21.3	21.3	21.3	21.3	21.3	SHENYEN	31.8	31.9	32.1	32.1	32.2	32.3	32.4	WILD RICE	11.0	12.1	12.8	13.3	13.6	14.4	15.0	ROSEAU	32.0	32.9	32.0	32.8	33.2	34.0	34.1	ROSEAU	9.1	9.4	10.1	11.0	11.6	12.5	13.9	ROSEAU	7.3	7.8	8.0	8.5	9.6	9.9	10.2	ROSEAU	6.0	1.6	17.1	14.3	16.1	17.9	19.4	ROSEAU	4.8	4.1	4.0	4.5	4.7	4.9	5.0	ROSEAU	6.3	10.6	11.7	12.0	14.0	20.5	21.2				X	
LOCATION	954	204	708	951	234	101	604																																																																																																																																																																																																																																																																																																						
WATER YEAR	1449.1	1419.7	1449.0	1449.0	1459.3	1460.7	1451.4																																																																																																																																																																																																																																																																																																						
RAIL YIELD (LAK)	1449.1	1449.2	1449.2	1449.2	1452.0	1451.1	1451.4																																																																																																																																																																																																																																																																																																						
LOCATION	958	991	755	363	156	103	658																																																																																																																																																																																																																																																																																																						
WATER YEAR	13.9	14.1	14.8	15.7	17.0	18.1	19.0																																																																																																																																																																																																																																																																																																						
RAIL YIELD (LAK)	13.1	12.8	13.9	15.1	16.1	17.6	18.6																																																																																																																																																																																																																																																																																																						
RAIL YIELD (LAK)	13.0	12.9	13.0	13.5	14.0	14.6	15.2																																																																																																																																																																																																																																																																																																						
RAIL YIELD (LAK)	15.0	15.5	16.0	16.5	17.0	17.5	18.0																																																																																																																																																																																																																																																																																																						
RAIL YIELD (LAK)	17.2	17.5	17.8	18.0	18.0	18.1	18.1																																																																																																																																																																																																																																																																																																						
RAIL YIELD (LAK)	41.0	43.4	43.0	43.7	44.8	45.3	46.0																																																																																																																																																																																																																																																																																																						
RAIL YIELD (LAK)	51.0	51.7	52.2	53.0	53.7	54.5	54.7																																																																																																																																																																																																																																																																																																						
JAMES HORN BASSIN	14.0	15.0	15.8	17.2	18.6	20.3	22.7																																																																																																																																																																																																																																																																																																						
JAMES HORN	9.5	9.8	10.0	10.4	11.2	11.9	13.0																																																																																																																																																																																																																																																																																																						
DEWIND	21.2	21.8	22.7	23.9	25.1	26.7	28.1																																																																																																																																																																																																																																																																																																						
WILD RICE	10.8	12.0	12.8	13.9	15.6	17.1	18.0																																																																																																																																																																																																																																																																																																						
SHENYEN	31.8	33.0	32.6	33.3	34.0	35.0	35.6																																																																																																																																																																																																																																																																																																						
ROSEAU	17.0	18.0	20.3	22.0	23.9	24.7	25.7																																																																																																																																																																																																																																																																																																						
ROSEAU HILL	26.6	27.9	29.4	31.2	34.4	37.0	39.1																																																																																																																																																																																																																																																																																																						
WILD RICE	13.4	13.7	13.1	13.3	13.5	13.6	13.7																																																																																																																																																																																																																																																																																																						
ROSEAU	31.8	33.0	32.6	33.3	34.0	35.0	35.6																																																																																																																																																																																																																																																																																																						
ROSEAU	45.0	46.7	45.7	46.8	48.1	49.0	50.1																																																																																																																																																																																																																																																																																																						
ROSEAU	104.0	105.0	108.1	109.0	109.1	110.3	110.9																																																																																																																																																																																																																																																																																																						
ROSEAU	807.4	807.7	808.4	809.5	809.9	812.5	812.0																																																																																																																																																																																																																																																																																																						
ROSEAU	14.1	14.0	14.0	14.8	17.7	18.9	19.4																																																																																																																																																																																																																																																																																																						
WILD RICE	20.0	21.9	23.4	24.0	25.6	26.9	27.0																																																																																																																																																																																																																																																																																																						
SHENYEN	15.2	15.3	16.6	18.0	19.6	21.7	22.7																																																																																																																																																																																																																																																																																																						
SHENYEN	19.6	19.8	19.3	20.5	22.4	25.0	25.2																																																																																																																																																																																																																																																																																																						
SHENYEN	20.2	20.8	21.1	21.2	21.2	21.2	21.2																																																																																																																																																																																																																																																																																																						
WILD RICE	21.2	21.3	21.3	21.3	21.3	21.3	21.3																																																																																																																																																																																																																																																																																																						
SHENYEN	31.8	31.9	32.1	32.1	32.2	32.3	32.4																																																																																																																																																																																																																																																																																																						
WILD RICE	11.0	12.1	12.8	13.3	13.6	14.4	15.0																																																																																																																																																																																																																																																																																																						
ROSEAU	32.0	32.9	32.0	32.8	33.2	34.0	34.1																																																																																																																																																																																																																																																																																																						
ROSEAU	9.1	9.4	10.1	11.0	11.6	12.5	13.9																																																																																																																																																																																																																																																																																																						
ROSEAU	7.3	7.8	8.0	8.5	9.6	9.9	10.2																																																																																																																																																																																																																																																																																																						
ROSEAU	6.0	1.6	17.1	14.3	16.1	17.9	19.4																																																																																																																																																																																																																																																																																																						
ROSEAU	4.8	4.1	4.0	4.5	4.7	4.9	5.0																																																																																																																																																																																																																																																																																																						
ROSEAU	6.3	10.6	11.7	12.0	14.0	20.5	21.2																																																																																																																																																																																																																																																																																																						
<p>Flood risk</p> <p>2019 Spring Flood Outlook <small>Above Normal Flood Risk Continues</small></p> <p>Significant Snowmelt Flooding Expected</p> <ul style="list-style-type: none"> The threat for significant snowmelt flooding continues to be above normal throughout the Red River Basin Major flooding is expected along the mainstem Red River with moderate to major flooding on the tributaries Future temperatures and precipitation (snow + rain) will have a big impact on flood potential The later the snowmelt gets, the more the risk for rapid and/or rainfall enhanced runoff increases Stay tuned for updated information as we get closer to the spring melt 				X																																																																																																																																																																																																																																																																																																									







	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Percent chance of exceedance</p> <p>2019 Spring Flood Outlook for Red River at Drayton Valid 03-18-2019 through 05-16-2019</p> <p>% Chance of reaching or exceeding this level</p> <p><small>*This outlook graphic shows the most likely river stage range based on the latest forecast. There is a 5% chance of values higher than depicted here. *Figure created on 03-14-2019</small></p>			X		
<p>Hydrologic Outlook/Thaw Updates</p> <p>Hydrologic Outlook/Thaw Updates</p> <ul style="list-style-type: none"> Monday, March 18th <ul style="list-style-type: none"> Favorable melt conditions to persist Daytime temperatures warming into the 40s and 50s will help ripen the snowpack, but low temperatures dipping back below freezing will keep water from entering the river system No major weather systems expected for the next week Thursday, March 21st <ul style="list-style-type: none"> Favorable melt conditions to persist Temperatures above freezing during the day and below freezing at night will start to create some ponding and water moving into local drainage Full blown river flooding and extensive overland flooding not expected to begin through at least early next week March 15th outlook remains valid as recent temperature and precipitation pattern has been accounted for 			X		

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Flood Warning 376 WGUS43 KFGF 271441 FLWFGF BULLETIN - IMMEDIATE BROADCAST REQUESTED Flood Warning National Weather Service Eastern North Dakota/Grand Forks ND 941 AM CDT Wed Mar 27 2019</p> <p>...The National Weather Service in Grand Forks, ND has issued a flood warning (new) for these river locations in Minnesota...North Dakota...</p> <p>new flooding is forecast to occur at... * Wahpeton...on the Red River...in Wilkin and Richland Counties.</p> <p>. A combination of reservoir outflows and localized snowmelt is causing the Wahpeton stage to slowly rise.</p> <p>Forecast temperatures show continued above freezing temperatures over the next 24 hours, followed by cooler temperatures March 29 through 31 More snowmelt is expected today.</p> <p>Below freezing forecast temperatures during March 30-31 should temporarily shut down the melt.</p> <p>A more typical springtime temperature regime, with daytime highs above freezing, and nighttime lows below freezing, is currently forecast for the first week of April. This would result in an ideal slow snowmelt pattern during that time.</p> <p>The current stage is affected by 1 to 2 feet of ice.</p> <p>*** A follow-up flood statement with more detailed flooding information will be issued shortly. ***</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-271541- /O.NEW.KFGF.FL.W.0001.190329T0600Z-190402T1200Z/ /WHNN8.1.SM.190329T0600Z.190330T1200Z.190401T0600Z.NO/ 941 AM CDT Wed Mar 27 2019</p> <p>The National Weather Service in Grand Forks, ND has issued a new Flood Warning for...</p> <ul style="list-style-type: none"> * ..Wahpeton...on the Red River * from late Thursday night to Tuesday morning. * At 8:30 AM Wednesday the stage was 10.2 feet. * Minor Flood Stage is 11.0 feet. * For the next 7 days...Minor flooding is forecast. * Forecast...rise above Flood Stage by early Friday morning and continue to rise to near 11.5 feet by Saturday mid-morning. The river will fall below Flood Stage by early Monday morning. <p>&&</p> <p>LAT...LON 4650 9684 4650 9663 4603 9641 4602 9672</p> <p>\$\$</p> <p>HydroTeam FGF</p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																
<p>Flood statement</p> <p>713 WGUS83 KFGF 171652 FLSFGF Flood Statement National Weather Service Eastern North Dakota/Grand Forks ND 1152 AM CDT Wed Apr 17 2019</p> <p>...The flood warning is now cancelled for these river locations in Minnesota...</p> <ul style="list-style-type: none"> * Alvarado...on the Snake River...in Marshall County <p>...The flood warning has been extended for these river locations in North Dakota...Minnesota...</p> <ul style="list-style-type: none"> * Hickson...on the Red River...in Cass County * Sabin...on the South Branch Buffalo River...in Clay County * Hawley...on the Buffalo River...in Clay County * Enderlin...on the Maple River...in Cass and Ransom Counties <p>...The flood warning continues for these river locations in Minnesota...North Dakota...</p> <ul style="list-style-type: none"> * Wahpeton...on the Red River ...in Wilkin and Richland Counties * Fargo...on the Red River ...in Clay and Cass Counties * Halstad...on the Red River ...in Norman and Traill Counties * East Grand Forks...on the Red River ...in Polk and Grand Forks Counties * Oslo...on the Red River ...in Marshall...Polk...Grand Forks and Walsh Counties * Drayton...on the Red River ...in Kittson...Marshall...Pembina and Walsh Counties * Pembina...on the Red River ...in Kittson and Pembina Counties * Dilworth...on the Buffalo River ...in Clay County * Twin Valley...on the Wild Rice River (MN) ...in Norman County * Hendrum...on the Wild Rice River (MN) ...in Norman County * Shelly...on the Marsh River ...in Norman County * Climax...on the Sandhill River ...in Polk County * Crookston...on the Red Lake River ...in Polk County * Hallock...on the Two Rivers River ...in Kittson County * Abercrombie...on the Wild Rice River (ND) ...in Richland County * Kindred...on the Sheyenne River ...in Cass and Richland Counties * West Fargo Diversion...on the Sheyenne River ...in Cass County * Harwood...on the Sheyenne River ...in Cass County * Mapleton...on the Maple River ...in Cass County <p>.This forecast is for a 7-day period...the highest stage indicated may not reflect the crest for this event.</p> <p>Forecasts are updated daily and stage values will change as new weather and river information is used.</p> <p>River forecasts use 24 hours of forecast precipitation. However, depending on the situation, they may include precipitation expected through the next 72 hours.</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPs/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-181653- /O.CON.KFGF.FL.W.0001.000000T0000Z-000000T0000Z/ /WHNN8.2.SM.190328T0937Z.190401T1115Z.000000T0000Z.NO/ 1152 AM CDT Wed Apr 17 2019</p> <p>The Flood Warning continues for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River. * until further notice...or until the warning is cancelled. * At 10:30 AM Wednesday the stage was 12.9 feet. * Minor flooding is occurring and during the next 7 days...Moderate flooding is forecast. * Moderate Flood Stage is 13.0 feet. * The river is forecast to crest at 14.5 (give or take one foot) on Sunday morning. * Reservoir outflows upstream are being lessened by the USACE. * Impact Statement(s) - At 15.0 feet, MAJOR FLOOD. Wahpeton storm sewer outlets and Main Street closed. <p>&&</p> <p>Daily 7am CDT/6am CST forecast stage in feet:</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Thu</th> <th>Fri</th> <th>Sat</th> <th>Sun</th> <th>Mon</th> <th>Tue</th> <th>Wed</th> </tr> </thead> <tbody> <tr> <td>(month/day)</td> <td>04/18</td> <td>04/19</td> <td>04/20</td> <td>04/21</td> <td>04/22</td> <td>04/23</td> <td>04/24</td> </tr> </tbody> </table> <p>...truncated 784 lines...</p>	Date	Thu	Fri	Sat	Sun	Mon	Tue	Wed	(month/day)	04/18	04/19	04/20	04/21	04/22	04/23	04/24					
Date	Thu	Fri	Sat	Sun	Mon	Tue	Wed														
(month/day)	04/18	04/19	04/20	04/21	04/22	04/23	04/24														

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation Report – Map of forecast points</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Map of Flood Forecast Points</p>  <p>Map current as of 11:00 am Wednesday, April 17</p> <p>Check here for the latest river forecasts</p> <p>Message of the Day:</p> <ul style="list-style-type: none"> Initial crest: rising river levels continue on the Red River near and north of Drayton. Secondary crest: secondary rises ongoing due to snowmelt/rainfall. Secondary crests should be lower than first for most locations (except possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks). Overland flooding continues along and near the Red River. <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>					
<p>Situation Report - Impacts</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Potential Impacts:</p> <ul style="list-style-type: none"> Snow melt from last week's winter storm continues to cause secondary rises in rivers and tributaries. This snowmelt and ongoing rainfall will also serve to lengthen duration of high water. <ul style="list-style-type: none"> Secondary crest not expected to be higher than previous crest for most locations, with the exception of possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks. Several roads (including I-29) continue to be impacted due to overland and river flooding, especially near the Red River. Backwater is still affecting many locations on the tributaries while few ice impacts remain. Continue to pay attention to closures and notices from local authorities. <p>River Basins Potentially Impacted:</p> <ul style="list-style-type: none"> Initial flood crest: <ul style="list-style-type: none"> The Red River at Drayton is nearing crest while levels continue to rise at Pembina. Secondary flood crest: <ul style="list-style-type: none"> Most locations across the southern portion of the basin are beginning their secondary rise. Backwater from the main stem Red River will continue to keep water levels high, especially between Fargo/Moorhead and the international border. <p>How to Monitor River Levels and Forecasts:</p> <ul style="list-style-type: none"> NWS River Observation/Forecast Page NWS Grand Forks Flood Briefing Page <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																	
<p>Situation Report – Temp and Precip Outlook</p> <p>National Weather Service Grand Forks, ND Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Temperature Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Highs</th> <th>Lows (Overnight)</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>46-51</td> <td>35-38</td> </tr> <tr> <td>Thursday, April 18</td> <td>52-56</td> <td>31-34</td> </tr> <tr> <td>Friday, April 19</td> <td>59-65</td> <td>41-46</td> </tr> <tr> <td>Saturday, April 20</td> <td>56-66</td> <td>35-40</td> </tr> <tr> <td>Sunday, April 21</td> <td>52-57</td> <td>31-36</td> </tr> <tr> <td>Monday, April 22</td> <td>50-57</td> <td>32-37</td> </tr> </tbody> </table> <p>Precipitation Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Type</th> <th>Liquid Amounts</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>Rain and Snow</td> <td>0"-0.50"</td> <td>Mainly southern RRV</td> </tr> <tr> <td>Thursday, April 18</td> <td>Showers/Thunder</td> <td>0"-0.10"</td> <td>Eastern ND/NW MN</td> </tr> <tr> <td>Friday, April 19</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Saturday, April 20</td> <td>Showers</td> <td>0"-0.20"</td> <td>Along/north Hwy 2</td> </tr> <tr> <td>Sunday, April 21</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Monday, April 22</td> <td>None</td> <td>0"</td> <td></td> </tr> </tbody> </table> <p>Click for a description of this product Click to evaluate this product</p>	Day of the Week	Highs	Lows (Overnight)	Wednesday, April 17	46-51	35-38	Thursday, April 18	52-56	31-34	Friday, April 19	59-65	41-46	Saturday, April 20	56-66	35-40	Sunday, April 21	52-57	31-36	Monday, April 22	50-57	32-37	Day of the Week	Type	Liquid Amounts	Location	Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV	Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN	Friday, April 19	None	0"		Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2	Sunday, April 21	None	0"		Monday, April 22	None	0"			X			
Day of the Week	Highs	Lows (Overnight)																																																				
Wednesday, April 17	46-51	35-38																																																				
Thursday, April 18	52-56	31-34																																																				
Friday, April 19	59-65	41-46																																																				
Saturday, April 20	56-66	35-40																																																				
Sunday, April 21	52-57	31-36																																																				
Monday, April 22	50-57	32-37																																																				
Day of the Week	Type	Liquid Amounts	Location																																																			
Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV																																																			
Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN																																																			
Friday, April 19	None	0"																																																				
Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2																																																			
Sunday, April 21	None	0"																																																				
Monday, April 22	None	0"																																																				
<p>Situation report – 24 hour precipitation</p> <p>National Weather Service Grand Forks, ND Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Precipitation over the last 24 hours in the River Forecasts (7 am Tue to 7 am Wed)</p>  <p>24 hour forecast precipitation in the River Forecasts (7 am Wed to 7 am Thu)</p>  <p>Click for a description of this product Click to evaluate this product</p>		X																																																				

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation report – Message of the Day</p>  <p>National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Message of the Day: Widespread river flooding and localized overland flooding continues. Red River continues to rise near and north of Drayton while southern portions of the valley are seeing re-rises due to snowmelt and ongoing rainfall.</p>   <p>Water on Demers Ave near the Sorlie Bridge in East Grand Forks MN on 4/12/19. Photo courtesy of Carl Jones.</p> <p>Quick facts you should know about flooding:</p> <ul style="list-style-type: none"> Flooding can be caused by heavy rain, rapid snow melt, ice jamming, levee overtopping, dam failure, or from wastewater systems. It only takes 6 inches of fast-moving water to knock you off your feet. A car can be moved in as little as 2 feet of water. 90% of all U.S. natural disasters declared by the President involve flooding. <p>Preparedness:</p> <p>Know your risk: Are you in a flood-prone area? Know your zone: www.fema.gov/flood-zones</p> <ul style="list-style-type: none"> You must purchase separate flood insurance for your home. There is a 30 day wait period between when you buy a flood insurance policy and when it goes into effect. Plan ahead! A Flood Watch is issued when conditions are favorable for flooding. Time to prepare! A Flood Warning is issued when flooding is imminent or occurring. Time to act! <p>Never drive into flood waters! Turn around, don't drown!</p> <p>Find out more information on our web page: www.weather.gov/fot/</p> <p>Follow us on Facebook and Twitter for more up to date information:</p> <p> @NWSGrandForks  @NWSGrand Forks</p> <p> Building a Weather-Ready Nation</p> <p>Click for a description of this product Click to evaluate this product</p>			X		

7. What changes might you recommend for any of the products shown?

Tutorials, risk assessment, predicted extent of flooding & for how long, given the data, how much to prepare

8. Which media would you use to find NWS information about the risk of flooding near you? Please circle all that apply:

Facebook

Twitter

Internet

Other: phone

9. Which digital platform are you most likely to use to access NWS resources? Circle one.

Smartphone Tablet Laptop Desktop Other: _____

10. Was anything in the session confusing? Yes No

If Yes, please explain:

11. What improvements could be made in the format or content of this session?

12. Additional comments:

Thank you for participating!

Survey Questions - Post-Focus Group Session Survey

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0690-0030. Without this approval, we could not conduct this post-focus group survey collection. Public reporting for this information collection is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Nurture Nature Center at: 518 Northampton Street, Easton, PA 18042, Attn: Rachel Hogan Carr, Executive Director, rhogan@nurturenature.org.

1. Please rate your agreement with the following statements about the forum.

Please check ONE box for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The information was clearly presented.	2				
I felt comfortable voicing my opinion.	2				
I know more about the National Weather Service (NWS) resources.	2				
I feel I could use NWS resources to judge my risk in an extreme weather event.	2				

2. What are the biggest barriers you face in using NWS flood forecast and warning products? Some examples to consider are lack of computer or phone, lack of internet access, language barriers, NWS products too difficult to understand, or other factors.

Simply not being proactive & checking for forecast before warning has to be issued. I feel NWS is on the right track to taking measure for increasing accessibility to information.

3. Our goal today was to gather feedback to improve NWS flood forecast and warning tools. Beyond the questions asked today, what else would be important to know about how you gather/would use NWS information about extreme weather risks and your intended actions?

Everything has an app so an app that was created to give links to critical areas that face floods for live data feeds would help.

4. After attending today's session, how likely are you to:

Please check ONE box for each statement.

	Very Likely	Somewhat Likely	Neither likely nor unlikely	Somewhat Unlikely	Unlikely
Create or revise plans to deal with extreme weather events using NWS products.	<i>2</i>				
Share what I learned about NWS products today with others.	<i>2</i>				
Seek NWS information about extreme weather risks.	<i>2</i>				
Use NWS products and information in your decision-making	<i>2</i>				

5. Do you prefer text-based or graphical/visual NWS products in trying to understand your level of risk from flooding? Circle one.

Text

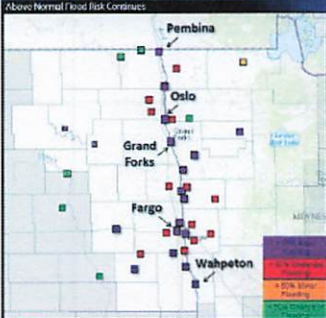
Graphics

Combined text and graphics

Please explain. _____

6. Please rate the weather products discussed today based on their usefulness to you in assessing your flood situation.

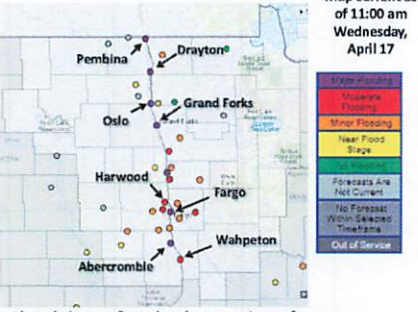
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Spring Flood Outlook</p>					
<p>Snow/rain Forecasts</p> <p>March 13-14: "Crippling" Blizzard</p> <p>Heavy wet snow combined with very strong winds to "shut down" the region. Heavy rain some freezing rain in the southeast. Bomb cyclone, impacts across Plains.</p>					



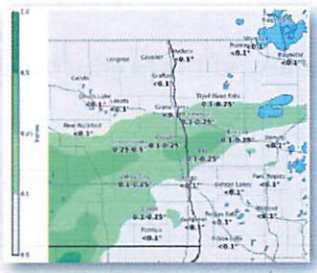
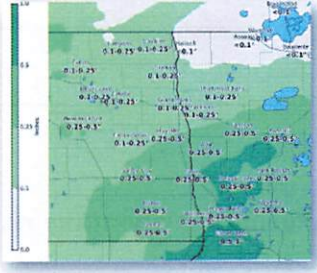
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																																																																																																																																																																																																				
<p>Long range probabilistic outlook</p> <p>DEVILS LAKE & STUMP LAKE (Last updated) (Snowmelt Probabilistic Outlook Valid March 1, 2019 - September 19, 2019)</p> <p>LOCATIONS: 298 298 298 298 298 298 298 298</p> <p>MINIUM DAM 1440.1 1440.2 1440.3 1440.4 1440.5 1440.6 1440.7 1440.8</p> <p>EMMETT DAM 1440.1 1440.2 1440.3 1440.4 1440.5 1440.6 1440.7 1440.8</p> <p>The current volume of Devils Lake and Stump Lake are ~1610.2 ft. MSL.</p> <p>Color code: Below Minor Moderate Major Flood of Record</p> <p>RED RIVER AND TRIBUTARIES (Last updated) (Snowmelt Probabilistic Outlook Valid March 1, 2019 - June 16, 2019)</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>Below</th> <th>Minor</th> <th>Moderate</th> <th>Major</th> <th>Flood of Record</th> </tr> </thead> <tbody> <tr><td>ANDREWS</td><td>95.8</td><td>90.1</td><td>75.8</td><td>50.1</td><td>10.0</td></tr> <tr><td>ANDREWS</td><td>13.8</td><td>14.1</td><td>14.8</td><td>15.7</td><td>16.1</td></tr> <tr><td>ANDREWS</td><td>32.1</td><td>32.8</td><td>33.9</td><td>35.1</td><td>36.1</td></tr> <tr><td>ANDREWS</td><td>33.0</td><td>34.9</td><td>36.9</td><td>37.9</td><td>38.9</td></tr> <tr><td>ANDREWS</td><td>38.0</td><td>39.9</td><td>39.0</td><td>38.5</td><td>40.0</td></tr> <tr><td>ANDREWS</td><td>45.8</td><td>47.0</td><td>49.0</td><td>50.6</td><td>52.7</td></tr> <tr><td>ANDREWS</td><td>37.2</td><td>37.8</td><td>37.8</td><td>37.9</td><td>38.1</td></tr> <tr><td>ANDREWS</td><td>41.8</td><td>43.4</td><td>43.0</td><td>43.7</td><td>44.6</td></tr> <tr><td>ANDREWS</td><td>51.0</td><td>51.9</td><td>52.2</td><td>53.0</td><td>53.7</td></tr> </tbody> </table> <p>Minnesota Tributaries</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>Below</th> <th>Minor</th> <th>Moderate</th> <th>Major</th> <th>Flood of Record</th> </tr> </thead> <tbody> <tr><td>ANDREWS</td><td>15.8</td><td>15.0</td><td>15.8</td><td>17.2</td><td>19.6</td></tr> <tr><td>ANDREWS</td><td>9.5</td><td>9.8</td><td>10.0</td><td>10.4</td><td>11.2</td></tr> <tr><td>ANDREWS</td><td>21.2</td><td>21.0</td><td>22.7</td><td>23.9</td><td>25.1</td></tr> <tr><td>ANDREWS</td><td>10.8</td><td>12.0</td><td>12.8</td><td>13.9</td><td>15.6</td></tr> <tr><td>ANDREWS</td><td>31.6</td><td>33.0</td><td>32.8</td><td>33.3</td><td>34.0</td></tr> <tr><td>ANDREWS</td><td>17.0</td><td>18.0</td><td>19.3</td><td>22.0</td><td>23.9</td></tr> <tr><td>ANDREWS</td><td>26.6</td><td>27.9</td><td>29.4</td><td>31.2</td><td>34.1</td></tr> <tr><td>ANDREWS</td><td>12.8</td><td>13.7</td><td>13.1</td><td>13.3</td><td>13.6</td></tr> <tr><td>ANDREWS</td><td>13.6</td><td>13.5</td><td>14.3</td><td>15.9</td><td>18.5</td></tr> <tr><td>ANDREWS</td><td>45.0</td><td>45.7</td><td>45.7</td><td>46.8</td><td>48.3</td></tr> <tr><td>ANDREWS</td><td>104.5</td><td>105.4</td><td>106.1</td><td>109.0</td><td>109.1</td></tr> <tr><td>ANDREWS</td><td>807.4</td><td>807.7</td><td>808.4</td><td>809.5</td><td>812.0</td></tr> <tr><td>ANDREWS</td><td>14.1</td><td>14.8</td><td>15.8</td><td>18.4</td><td>17.7</td></tr> </tbody> </table> <p>North Dakota Tributaries</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>Below</th> <th>Minor</th> <th>Moderate</th> <th>Major</th> <th>Flood of Record</th> </tr> </thead> <tbody> <tr><td>ANDREWS</td><td>20.0</td><td>21.9</td><td>23.4</td><td>24.0</td><td>25.6</td></tr> <tr><td>ANDREWS</td><td>13.2</td><td>13.8</td><td>14.6</td><td>16.0</td><td>17.7</td></tr> <tr><td>ANDREWS</td><td>23.6</td><td>25.8</td><td>26.3</td><td>27.4</td><td>28.0</td></tr> <tr><td>ANDREWS</td><td>20.2</td><td>20.5</td><td>21.1</td><td>21.2</td><td>21.2</td></tr> <tr><td>ANDREWS</td><td>21.2</td><td>21.3</td><td>21.3</td><td>21.3</td><td>21.3</td></tr> <tr><td>ANDREWS</td><td>91.8</td><td>91.9</td><td>92.1</td><td>92.2</td><td>92.4</td></tr> <tr><td>ANDREWS</td><td>13.8</td><td>13.1</td><td>13.8</td><td>13.3</td><td>14.4</td></tr> <tr><td>ANDREWS</td><td>25.0</td><td>23.9</td><td>25.5</td><td>25.8</td><td>24.0</td></tr> <tr><td>ANDREWS</td><td>5.1</td><td>5.4</td><td>12.1</td><td>13.3</td><td>14.6</td></tr> <tr><td>ANDREWS</td><td>7.3</td><td>7.8</td><td>8.0</td><td>8.5</td><td>9.4</td></tr> <tr><td>ANDREWS</td><td>0.5</td><td>1.0</td><td>13.1</td><td>14.1</td><td>16.1</td></tr> <tr><td>ANDREWS</td><td>5.4</td><td>4.1</td><td>4.3</td><td>3.4</td><td>3.7</td></tr> <tr><td>ANDREWS</td><td>0.3</td><td>10.4</td><td>1.7</td><td>13.0</td><td>20.5</td></tr> </tbody> </table> <p>Notes</p> <ol style="list-style-type: none"> Devils Lake Basin Runoff Risk has not changed much since February. A somewhat above normal rise is expected, from 1 to 2 ft. No update since 7 Mar 2019. Note: Devils Lake is currently about 1.5 feet lower than this time last year. Red River Basin Runoff Risk has jumped markedly. All Red River main stem points will see significantly higher flows. - due to significant snow/SWE loads from 9 Mar and 14 Mar storms, over damp and deep frozen antecedent conditions, especially in the far southern Red River Basin, south of Fargo; - conglad with much increased runoff potential from the MN tributaries, and Red Lake River Basin. Snowpack/SWE and runoff potential has increased in most all MN tributaries. Central and South tribis have seen the highest increase in snow and SWE this past week, including the Red Lake River. Roseau River Basin now has a slight increase to just above normal for runoff risk. ND Wild Rice has a quite High Runoff Risk, with much above normal snowpack. Mid to Lower Sheyenne has gained appreciably in snow and SWE. High Red River levels lead to sig. backwater at Harwood. Some snow/SWE increases on Maple and Rush Rivers as well. Slight increase on Park River, else northeast ND saw least overall gains in SWE. 	LOCATION	Below	Minor	Moderate	Major	Flood of Record	ANDREWS	95.8	90.1	75.8	50.1	10.0	ANDREWS	13.8	14.1	14.8	15.7	16.1	ANDREWS	32.1	32.8	33.9	35.1	36.1	ANDREWS	33.0	34.9	36.9	37.9	38.9	ANDREWS	38.0	39.9	39.0	38.5	40.0	ANDREWS	45.8	47.0	49.0	50.6	52.7	ANDREWS	37.2	37.8	37.8	37.9	38.1	ANDREWS	41.8	43.4	43.0	43.7	44.6	ANDREWS	51.0	51.9	52.2	53.0	53.7	LOCATION	Below	Minor	Moderate	Major	Flood of Record	ANDREWS	15.8	15.0	15.8	17.2	19.6	ANDREWS	9.5	9.8	10.0	10.4	11.2	ANDREWS	21.2	21.0	22.7	23.9	25.1	ANDREWS	10.8	12.0	12.8	13.9	15.6	ANDREWS	31.6	33.0	32.8	33.3	34.0	ANDREWS	17.0	18.0	19.3	22.0	23.9	ANDREWS	26.6	27.9	29.4	31.2	34.1	ANDREWS	12.8	13.7	13.1	13.3	13.6	ANDREWS	13.6	13.5	14.3	15.9	18.5	ANDREWS	45.0	45.7	45.7	46.8	48.3	ANDREWS	104.5	105.4	106.1	109.0	109.1	ANDREWS	807.4	807.7	808.4	809.5	812.0	ANDREWS	14.1	14.8	15.8	18.4	17.7	LOCATION	Below	Minor	Moderate	Major	Flood of Record	ANDREWS	20.0	21.9	23.4	24.0	25.6	ANDREWS	13.2	13.8	14.6	16.0	17.7	ANDREWS	23.6	25.8	26.3	27.4	28.0	ANDREWS	20.2	20.5	21.1	21.2	21.2	ANDREWS	21.2	21.3	21.3	21.3	21.3	ANDREWS	91.8	91.9	92.1	92.2	92.4	ANDREWS	13.8	13.1	13.8	13.3	14.4	ANDREWS	25.0	23.9	25.5	25.8	24.0	ANDREWS	5.1	5.4	12.1	13.3	14.6	ANDREWS	7.3	7.8	8.0	8.5	9.4	ANDREWS	0.5	1.0	13.1	14.1	16.1	ANDREWS	5.4	4.1	4.3	3.4	3.7	ANDREWS	0.3	10.4	1.7	13.0	20.5					
LOCATION	Below	Minor	Moderate	Major	Flood of Record																																																																																																																																																																																																																																				
ANDREWS	95.8	90.1	75.8	50.1	10.0																																																																																																																																																																																																																																				
ANDREWS	13.8	14.1	14.8	15.7	16.1																																																																																																																																																																																																																																				
ANDREWS	32.1	32.8	33.9	35.1	36.1																																																																																																																																																																																																																																				
ANDREWS	33.0	34.9	36.9	37.9	38.9																																																																																																																																																																																																																																				
ANDREWS	38.0	39.9	39.0	38.5	40.0																																																																																																																																																																																																																																				
ANDREWS	45.8	47.0	49.0	50.6	52.7																																																																																																																																																																																																																																				
ANDREWS	37.2	37.8	37.8	37.9	38.1																																																																																																																																																																																																																																				
ANDREWS	41.8	43.4	43.0	43.7	44.6																																																																																																																																																																																																																																				
ANDREWS	51.0	51.9	52.2	53.0	53.7																																																																																																																																																																																																																																				
LOCATION	Below	Minor	Moderate	Major	Flood of Record																																																																																																																																																																																																																																				
ANDREWS	15.8	15.0	15.8	17.2	19.6																																																																																																																																																																																																																																				
ANDREWS	9.5	9.8	10.0	10.4	11.2																																																																																																																																																																																																																																				
ANDREWS	21.2	21.0	22.7	23.9	25.1																																																																																																																																																																																																																																				
ANDREWS	10.8	12.0	12.8	13.9	15.6																																																																																																																																																																																																																																				
ANDREWS	31.6	33.0	32.8	33.3	34.0																																																																																																																																																																																																																																				
ANDREWS	17.0	18.0	19.3	22.0	23.9																																																																																																																																																																																																																																				
ANDREWS	26.6	27.9	29.4	31.2	34.1																																																																																																																																																																																																																																				
ANDREWS	12.8	13.7	13.1	13.3	13.6																																																																																																																																																																																																																																				
ANDREWS	13.6	13.5	14.3	15.9	18.5																																																																																																																																																																																																																																				
ANDREWS	45.0	45.7	45.7	46.8	48.3																																																																																																																																																																																																																																				
ANDREWS	104.5	105.4	106.1	109.0	109.1																																																																																																																																																																																																																																				
ANDREWS	807.4	807.7	808.4	809.5	812.0																																																																																																																																																																																																																																				
ANDREWS	14.1	14.8	15.8	18.4	17.7																																																																																																																																																																																																																																				
LOCATION	Below	Minor	Moderate	Major	Flood of Record																																																																																																																																																																																																																																				
ANDREWS	20.0	21.9	23.4	24.0	25.6																																																																																																																																																																																																																																				
ANDREWS	13.2	13.8	14.6	16.0	17.7																																																																																																																																																																																																																																				
ANDREWS	23.6	25.8	26.3	27.4	28.0																																																																																																																																																																																																																																				
ANDREWS	20.2	20.5	21.1	21.2	21.2																																																																																																																																																																																																																																				
ANDREWS	21.2	21.3	21.3	21.3	21.3																																																																																																																																																																																																																																				
ANDREWS	91.8	91.9	92.1	92.2	92.4																																																																																																																																																																																																																																				
ANDREWS	13.8	13.1	13.8	13.3	14.4																																																																																																																																																																																																																																				
ANDREWS	25.0	23.9	25.5	25.8	24.0																																																																																																																																																																																																																																				
ANDREWS	5.1	5.4	12.1	13.3	14.6																																																																																																																																																																																																																																				
ANDREWS	7.3	7.8	8.0	8.5	9.4																																																																																																																																																																																																																																				
ANDREWS	0.5	1.0	13.1	14.1	16.1																																																																																																																																																																																																																																				
ANDREWS	5.4	4.1	4.3	3.4	3.7																																																																																																																																																																																																																																				
ANDREWS	0.3	10.4	1.7	13.0	20.5																																																																																																																																																																																																																																				
<p>Flood risk</p> <p>2019 Spring Flood Outlook (Above Normal Flood Risk Continues) (Weather Forecast Office Grand Forks, ND) (Valid March 16, 2019 11:00 AM EDT)</p> <p>Significant Snowmelt Flooding Expected</p> <ul style="list-style-type: none"> The threat for significant snowmelt flooding continues to be above normal throughout the Red River Basin Major flooding is expected along the mainstem Red River with moderate to major flooding on the tributaries Future temperatures and precipitation (snow + rain) will have a big impact on flood potential The later the snowmelt gets, the more the risk for rapid and/or rainfall enhanced runoff increases Stay tuned for updated information as we get closer to the spring melt. 																																																																																																																																																																																																																																									







	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Percent chance of exceedance</p> <p>2019 Spring Flood Outlook for Red River at Drayton Valid 03-18-2019 through 06-16-2019 % Chance of reaching or exceeding this level</p> <p><small>*This outlook graphic shows the most likely river stage range based on the latest forecast. There is a 5% chance of values higher than depicted here. *Figure created on 03-14-2019</small></p>					
<p>Hydrologic Outlook/Thaw Updates</p> <p>Hydrologic Outlook/Thaw Updates</p> <ul style="list-style-type: none"> Monday, March 18th <ul style="list-style-type: none"> Favorable melt conditions to persist Daytime temperatures warming into the 40s and 50s will help ripen the snowpack, but low temperatures dipping back below freezing will keep water from entering the river system No major weather systems expected for the next week Thursday, March 21st <ul style="list-style-type: none"> Favorable melt conditions to persist Temperatures above freezing during the day and below freezing at night will start to create some ponding and water moving into local drainage Full blown river flooding and extensive overland flooding not expected to begin through at least early next week March 15th outlook remains valid as recent temperature and precipitation pattern has been accounted for 					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Flood Warning 376 WGUS43 KFGF 271441 FLWFGF BULLETIN - IMMEDIATE BROADCAST REQUESTED Flood Warning National Weather Service Eastern North Dakota/Grand Forks ND 941 AM CDT Wed Mar 27 2019</p> <p>...The National Weather Service in Grand Forks, ND has issued a flood warning (new) for these river locations in Minnesota...North Dakota...</p> <p>new flooding is forecast to occur at... * Wahpeton...on the Red River...in Wilkin and Richland Counties.</p> <p>. A combination of reservoir outflows and localized snowmelt is causing the Wahpeton stage to slowly rise.</p> <p>Forecast temperatures show continued above freezing temperatures over the next 24 hours, followed by cooler temperatures March 29 through 31 More snowmelt is expected today.</p> <p>Below freezing forecast temperatures during March 30-31 should temporarily shut down the melt.</p> <p>A more typical springtime temperature regime, with daytime highs above freezing, and nighttime lows below freezing, is currently forecast for the first week of April. This would result in an ideal slow snowmelt pattern during that time.</p> <p>The current stage is affected by 1 to 2 feet of ice.</p> <p>*** A follow-up flood statement with more detailed flooding information will be issued shortly. ***</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-271541- /O.NEW.KFGF.FL.W.0001.190329T0600Z-190402T1200Z/ /WHNN8.1.SM.190329T0600Z.190330T1200Z.190401T0600Z.NO/ 941 AM CDT Wed Mar 27 2019</p> <p>The National Weather Service in Grand Forks, ND has issued a new Flood Warning for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River * from late Thursday night to Tuesday morning. * At 8:30 AM Wednesday the stage was 10.2 feet. * Minor Flood Stage is 11.0 feet. * For the next 7 days...Minor flooding is forecast. * Forecast...rise above Flood Stage by early Friday morning and continue to rise to near 11.5 feet by Saturday mid-morning. The river will fall below Flood Stage by early Monday morning. <p>&&</p> <p>LAT...LON 4650 9684 4650 9663 4603 9641 4602 9672</p> <p>\$\$</p> <p>HydroTeam FGF</p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																	
<p>Flood statement</p> <p>713 WGU583 KFGF 171652 FLSFGF Flood Statement National Weather Service Eastern North Dakota/Grand Forks ND 1152 AM CDT Wed Apr 17 2019</p> <p>...The flood warning is now cancelled for these river locations in Minnesota...</p> <ul style="list-style-type: none"> * Alvarado...on the Snake River...in Marshall County <p>...The flood warning has been extended for these river locations in North Dakota...Minnesota...</p> <ul style="list-style-type: none"> * Hickson...on the Red River...in Cass County * Sabin...on the South Branch Buffalo River...in Clay County * Hawley...on the Buffalo River...in Clay County * Enderlin...on the Maple River...in Cass and Ransom Counties <p>...The flood warning continues for these river locations in Minnesota...North Dakota...</p> <ul style="list-style-type: none"> * Wahpeton...on the Red River ...in Wilkin and Richland Counties * Fargo...on the Red River ...in Clay and Cass Counties * Halstad...on the Red River ...in Norman and Traill Counties * East Grand Forks...on the Red River ...in Polk and Grand Forks Counties * Oslo...on the Red River ...in Marshall...Polk...Grand Forks and Walsh Counties * Drayton...on the Red River ...in Kittson...Marshall...Pembina and Walsh Counties * Pembina...on the Red River ...in Kittson and Pembina Counties * Dilworth...on the Buffalo River ...in Clay County * Twin Valley...on the Wild Rice River (MN) ...in Norman County * Hendrum...on the Wild Rice River (MN) ...in Norman County * Shelly...on the Marsh River ...in Norman County * Climax...on the Sandhill River ...in Polk County * Crookston...on the Red Lake River ...in Polk County * Hallock...on the Two Rivers River ...in Kittson County * Abercrombie...on the Wild Rice River (ND) ...in Richland County * Kindred...on the Sheyenne River ...in Cass and Richland Counties * West Fargo Diversion...on the Sheyenne River ...in Cass County * Harwood...on the Sheyenne River ...in Cass County * Mapleton...on the Maple River ...in Cass County <p>.This forecast is for a 7-day period...the highest stage indicated may not reflect the crest for this event.</p> <p>Forecasts are updated daily and stage values will change as new weather and river information is used.</p> <p>River forecasts use 24 hours of forecast precipitation. However, depending on the situation, they may include precipitation expected through the next 72 hours.</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-181653- /O.CON.KFGF.FL.W.0001.00000T0000Z-00000T0000Z/ /WHNN8.2.SM.190328T0937Z.190401T1115Z.00000T0000Z.NO/ 1152 AM CDT Wed Apr 17 2019</p> <p>The Flood Warning continues for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River. * until further notice...or until the warning is cancelled. * At 10:30 AM Wednesday the stage was 12.9 feet. * Minor flooding is occurring and during the next 7 days...Moderate flooding is forecast. * Moderate Flood Stage is 13.0 feet. * The river is forecast to crest at 14.5 (give or take one foot) on Sunday morning. * Reservoir outflows upstream are being lessened by the USACE. * Impact Statement(s) - At 15.0 feet, MAJOR FLOOD. Wahpeton storm sewer outlets and Main Street closed. <p>&&</p> <p>Daily 7am CDT/6am CST forecast stage in feet:</p> <table border="1"> <thead> <tr> <th>Date (month/day)</th> <th>Thu 04/18</th> <th>Fri 04/19</th> <th>Sat 04/20</th> <th>Sun 04/21</th> <th>Mon 04/22</th> <th>Tue 04/23</th> <th>Wed 04/24</th> </tr> </thead> <tbody> <tr> <td>...</td></tr> <tr> <td>truncated 784 lines...</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24	...	truncated 784 lines...												
Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24															
...																						
truncated 784 lines...																						

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation Report – Map of forecast points</p> <p>National Weather Service Grand Forks, ND Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Map of Flood Forecast Points</p>  <p>Map current as of 11:00 am Wednesday, April 17</p> <p>Check here for the latest river forecasts</p> <p>Message of the Day:</p> <ul style="list-style-type: none"> Initial crest: rising river levels continue on the Red River near and north of Drayton. Secondary crest: secondary rises ongoing due to snowmelt/rainfall. Secondary crests should be lower than first for most locations (except possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks). Overland flooding continues along and near the Red River. <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>		2			
<p>Situation Report - Impacts</p> <p>National Weather Service Grand Forks, ND Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Potential Impacts:</p> <ul style="list-style-type: none"> Snow melt from last week's winter storm continues to cause secondary rises in rivers and tributaries. This snowmelt and ongoing rainfall will also serve to lengthen duration of high water. <ul style="list-style-type: none"> Secondary crest not expected to be higher than previous crest for most locations, with the exception of possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks. Several roads (including I-29) continue to be impacted due to overland and river flooding, especially near the Red River. Backwater is still affecting many locations on the tributaries while few ice impacts remain. Continue to pay attention to closures and notices from local authorities. <p>River Basins Potentially Impacted:</p> <ul style="list-style-type: none"> Initial flood crest: <ul style="list-style-type: none"> The Red River at Drayton is nearing crest while levels continue to rise at Pembina. Secondary flood crest: <ul style="list-style-type: none"> Most locations across the southern portion of the basin are beginning their secondary rise. Backwater from the main stem Red River will continue to keep water levels high, especially between Fargo/Moorhead and the international border. <p>How to Monitor River Levels and Forecasts:</p> <ul style="list-style-type: none"> NWS River Observation/Forecast Page NWS Grand Forks Flood Briefing Page <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>		2			

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																	
<p>Situation Report – Temp and Precip Outlook</p>  <p>National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p style="text-align: center; background-color: #FFD700;">Moderate-Major Flooding Continues</p> <p style="text-align: center;">Temperature Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Highs</th> <th>Lows (Overnight)</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>48-51</td> <td>35-38</td> </tr> <tr> <td>Thursday, April 18</td> <td>52-56</td> <td>31-34</td> </tr> <tr> <td>Friday, April 19</td> <td>59-65</td> <td>41-46</td> </tr> <tr> <td>Saturday, April 20</td> <td>56-66</td> <td>35-40</td> </tr> <tr> <td>Sunday, April 21</td> <td>52-57</td> <td>31-36</td> </tr> <tr> <td>Monday, April 22</td> <td>50-57</td> <td>32-37</td> </tr> </tbody> </table> <p style="text-align: center;">Precipitation Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Type</th> <th>Liquid Amounts</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>Rain and Snow</td> <td>0"-0.50"</td> <td>Mainly southern RRV</td> </tr> <tr> <td>Thursday, April 18</td> <td>Showers/Thunder</td> <td>0"-0.10"</td> <td>Eastern ND/NW MN</td> </tr> <tr> <td>Friday, April 19</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Saturday, April 20</td> <td>Showers</td> <td>0"-0.20"</td> <td>Along/north Hwy 2</td> </tr> <tr> <td>Sunday, April 21</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Monday, April 22</td> <td>None</td> <td>0"</td> <td></td> </tr> </tbody> </table> <p>Click for a description of this product Click to evaluate this product</p>	Day of the Week	Highs	Lows (Overnight)	Wednesday, April 17	48-51	35-38	Thursday, April 18	52-56	31-34	Friday, April 19	59-65	41-46	Saturday, April 20	56-66	35-40	Sunday, April 21	52-57	31-36	Monday, April 22	50-57	32-37	Day of the Week	Type	Liquid Amounts	Location	Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV	Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN	Friday, April 19	None	0"		Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2	Sunday, April 21	None	0"		Monday, April 22	None	0"				2		
Day of the Week	Highs	Lows (Overnight)																																																				
Wednesday, April 17	48-51	35-38																																																				
Thursday, April 18	52-56	31-34																																																				
Friday, April 19	59-65	41-46																																																				
Saturday, April 20	56-66	35-40																																																				
Sunday, April 21	52-57	31-36																																																				
Monday, April 22	50-57	32-37																																																				
Day of the Week	Type	Liquid Amounts	Location																																																			
Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV																																																			
Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN																																																			
Friday, April 19	None	0"																																																				
Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2																																																			
Sunday, April 21	None	0"																																																				
Monday, April 22	None	0"																																																				
<p>Situation report – 24 hour precipitation</p>  <p>National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p style="text-align: center; background-color: #FFD700;">Moderate-Major Flooding Continues</p> <p>Precipitation over the last 24 hours in the River Forecasts (7 am Tue to 7 am Wed)</p>  <p>24 hour forecast precipitation in the River Forecasts (7 am Wed to 7 am Thu)</p>  <p>Click for a description of this product Click to evaluate this product</p>			2																																																			

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation report – Message of the Day</p>  <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Message of the Day: Widespread river flooding and localized overland flooding continues. Red River continues to rise near and north of Drayton while southern portions of the valley are seeing re-rises due to snowmelt and ongoing rainfall.</p>   <p>Water on Demers Ave near the Sorlie Bridge in East Grand Forks MN on 4/12/19. Photo courtesy of Carl Jones.</p> <p>Quick facts you should know about flooding:</p> <ul style="list-style-type: none"> Flooding can be caused by heavy rain, rapid snow melt, ice jamming, levee overtopping, dam failure, or from wastewater systems. It only takes 6 inches of fast-moving water to knock you off your feet. A car can be moved in as little as 2 feet of water. 50% of all U.S. natural disasters declared by the President involve flooding. <p>Preparedness:</p> <p>Know your risk: Are you in a flood-prone area? Know your zone: www.fema.gov/flood-zones</p> <ul style="list-style-type: none"> You must purchase separate flood insurance for your home. There is a 30 day wait period between when you buy a flood insurance policy and when it goes into effect. Plan ahead! A Flood Watch is issued when conditions are favorable for flooding. Time to prepare! A Flood Warning is issued when flooding is imminent or occurring. Time to act! <p>Never drive into flood waters! Turn around, don't drown!</p> <p>Find out more information on our web page: www.weather.gov/fat/</p> <p>Follow us on Facebook and Twitter for more up to date information:</p> <p> @NWSGrandForks  @NWSGrandForks</p> <p> Building a Weather-Ready Nation</p> <p>Click for a description of this product Click to evaluate this product</p>					

7. What changes might you recommend for any of the products shown?

8. Which media would you use to find NWS information about the risk of flooding near you? Please circle all that apply:

Facebook
 Twitter
 Internet
 Other: _____

9. Which digital platform are you most likely to use to access NWS resources? Circle one.

Smartphone Tablet Laptop Desktop Other: _____

10. Was anything in the session confusing? Yes No

If Yes, please explain:

11. What improvements could be made in the format or content of this session?

12. Additional comments:

I very much appreciate the
things I learned & being a part
of a *Thank you for participating!*
discussion such as this that's
very important

Survey Questions - Post-Focus Group Session Survey

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0690-0030. Without this approval, we could not conduct this post-focus group survey collection. Public reporting for this information collection is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Nurture Nature Center at: 518 Northampton Street, Easton, PA 18042, Attn: Rachel Hogan Carr, Executive Director, rhogan@nurturenature.org.

1. Please rate your agreement with the following statements about the forum.

Please check ONE box for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The information was clearly presented.		✓			
I felt comfortable voicing my opinion.		✓			
I know more about the National Weather Service (NWS) resources.		✓			
I feel I could use NWS resources to judge my risk in an extreme weather event.		✓			

2. What are the biggest barriers you face in using NWS flood forecast and warning products? Some examples to consider are lack of computer or phone, lack of internet access, language barriers, NWS products too difficult to understand, or other factors.

3. Our goal today was to gather feedback to improve NWS flood forecast and warning tools. Beyond the questions asked today, what else would be important to know about how you gather/would use NWS information about extreme weather risks and your intended actions?

4. After attending today's session, how likely are you to:

Please check ONE box for each statement.

	Very Likely	Somewhat Likely	Neither likely nor unlikely	Somewhat Unlikely	Unlikely
Create or revise plans to deal with extreme weather events using NWS products.	✓				
Share what I learned about NWS products today with others.	✓				
Seek NWS information about extreme weather risks.	✓				
Use NWS products and information in your decision-making	✓				

5. Do you prefer text-based or graphical/visual NWS products in trying to understand your level of risk from flooding? Circle one.

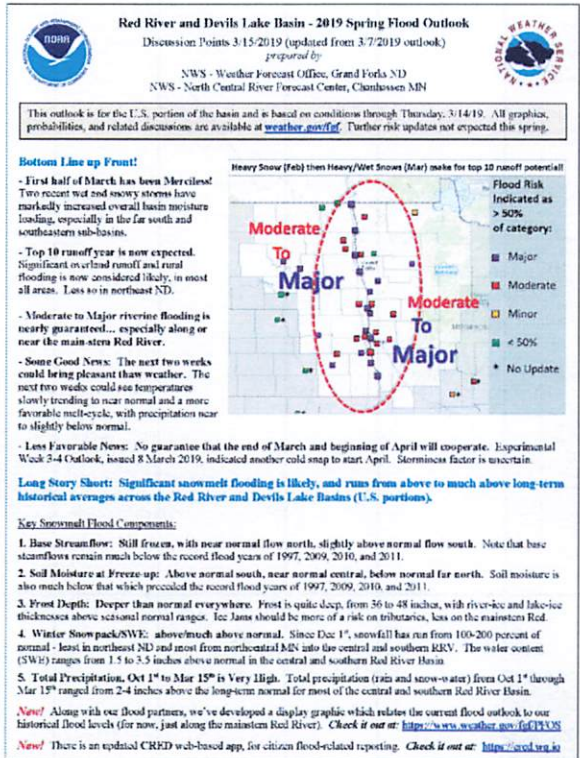
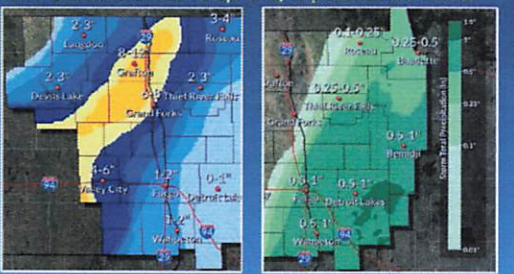
Text

Graphics

Combined text and graphics

Please explain. _____

6. Please rate the weather products discussed today based on their usefulness to you in assessing your flood situation.

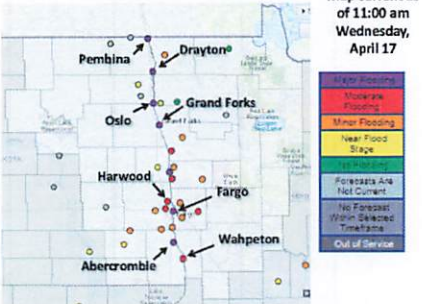
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Spring Flood Outlook</p>  <p>Red River and Devils Lake Basin - 2019 Spring Flood Outlook Discussion Points 3/15/2019 (updated from 3/7/2019 outlook) prepared by: NWS - Weather Forecast Office, Grand Forks ND NWS - North Central River Forecast Center, Chambliss MN</p> <p>This outlook is for the U.S. portion of the basin and is based on conditions through Thursday, 3/14/19. All graphics, probabilities, and related discussions are available at weather.gov/faf. Further risk updates not expected this spring.</p> <p>Bottom Line up Front!</p> <ul style="list-style-type: none"> - First half of March has been Merciless! Two recent wet and snowy storms have markedly increased overall basin moisture loading, especially in the far south and southeastern sub-basins. - Top 10 runoff year is now expected. Significant on-land runoff and rural flooding is now considered likely, in most all areas. Less so in northeast ND. - Moderate to Major riverine flooding is nearly guaranteed... especially along or near the main-stem Red River. - Some Good News: The next two weeks could bring pleasant thaw weather. The next few weeks could see temperatures slowly trending to near normal and a more favorable melt-cycle, with precipitation near to slightly below normal. - Less Favorable News: No guarantee that the end of March and beginning of April will cooperate. Experimental Week 2-4 Outlook, issued 8 March 2019, indicated another cold snap to start April. Storminess factor is uncertain. <p>Long Story Short: Significant snowmelt flooding is likely, and runs from above to much above long-term historical averages across the Red River and Devils Lake Basins (U.S. portions).</p> <p>Key Snowmelt Flood Components:</p> <ol style="list-style-type: none"> 1. Base Streamflow: Still frozen, with near normal flow north, slightly above normal flow south. Note that base streamflows remain much below the record flood years of 1997, 2009, 2010, and 2011. 2. Soil Moisture at Freeze-up: Above normal south, near normal central, below normal far north. Soil moisture is also much below that which preceded the record flood years of 1997, 2009, 2010, and 2011. 3. Frost Depth: Deeper than normal everywhere. Frost is quite deep, from 36 to 48 inches, with river-ice and lake-ice thicknesses above seasonal normal ranges. Ice jams should be more of a risk on tributaries, less on the mainstem Red. 4. Winter Snowpack/SWE: above/much above normal. Since Dec 1st, snowfall has run from 100-200 percent of normal - least in northeast ND and most from northcentral MN into the central and southern RRV. The water content (SWC) ranges from 1.5 to 3.5 inches above normal in the central and southern Red River Basin. 5. Total Precipitation, Oct 1st to Mar 15th is Very High. Total precipitation (rain and snow-water) from Oct 1st through Mar 15th ranged from 2-4 inches above the long-term normal for most of the central and southern Red River Basin. <p><i>New!</i> Along with our flood partners, we've developed a display graphic which relates the current flood outlook to our historical flood levels (for now, just along the mainstem Red River). Check it out at: https://www.weather.gov/faf/FRUS</p> <p><i>New!</i> There is an updated CRED web-based app, for citizen flood-related reporting. Check it out at: https://cred.gov</p>			✓		
<p>Snow/rain Forecasts</p> <p>March 13-14: "Crippling" Blizzard Heavy wet snow combined with very strong winds to "shut down" the region. Heavy rain some freezing rain in the southeast. Bomb cyclone, impacts across Plains.</p> 			✓		



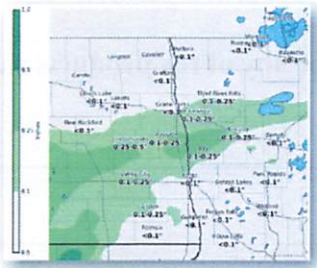
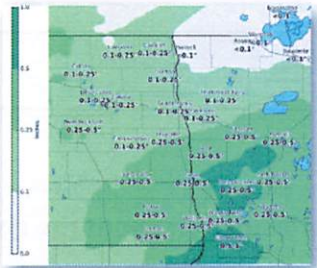
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																																																																																																																																																																																																																																																																								
<p>Long range probabilistic outlook</p> <p>DEVILS LAKE & STUMP LAKE. Long Range Probabilistic Outlook (last updated) Valid March 1, 2019 September 19, 2019</p> <p>LOCATION: 258 298 273 254 248 251 239</p> <p>2019 SWE 1445.1 1419.2 1482.0 1454.4 1434.5 1420.7 1451.4</p> <p>2019 SWE LAKES 1442.1 1442.2 1447.9 1442.2 1453.0 1451.7 1451.4</p> <p>The current water level of Devils Lake and Stump Lake are 1442.2 ft. MSL.</p> <p>Color code: Below Minor Moderate Major Flood of Record</p> <p>RED RIVER AND TRIBUTARIES... Long Range Probabilistic Outlook VA 16 March 13, 2019 June 16, 2019</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>258</th> <th>298</th> <th>273</th> <th>254</th> <th>248</th> <th>251</th> <th>239</th> </tr> </thead> <tbody> <tr> <td>ROCKWELL</td> <td>13.9</td> <td>14.1</td> <td>14.8</td> <td>16.7</td> <td>17.9</td> <td>18.2</td> <td>19.0</td> </tr> <tr> <td>ROCKWELL</td> <td>32.1</td> <td>32.1</td> <td>33.9</td> <td>35.1</td> <td>36.1</td> <td>37.6</td> <td>38.6</td> </tr> <tr> <td>PARKE</td> <td>31.0</td> <td>31.9</td> <td>36.5</td> <td>37.9</td> <td>38.9</td> <td>40.5</td> <td>41.4</td> </tr> <tr> <td>ROCKWELL</td> <td>39.0</td> <td>39.3</td> <td>39.0</td> <td>39.8</td> <td>40.0</td> <td>40.6</td> <td>41.2</td> </tr> <tr> <td>CHANDLER</td> <td>45.8</td> <td>47.5</td> <td>49.0</td> <td>50.6</td> <td>52.7</td> <td>54.6</td> <td>56.7</td> </tr> <tr> <td>CHANDLER</td> <td>37.2</td> <td>37.8</td> <td>37.8</td> <td>37.9</td> <td>38.0</td> <td>38.1</td> <td>38.1</td> </tr> <tr> <td>CHANDLER</td> <td>41.8</td> <td>42.4</td> <td>43.0</td> <td>43.7</td> <td>44.8</td> <td>45.3</td> <td>46.0</td> </tr> <tr> <td>CHANDLER</td> <td>51.0</td> <td>51.9</td> <td>52.2</td> <td>53.0</td> <td>53.7</td> <td>54.5</td> <td>54.7</td> </tr> </tbody> </table> <p>Minnesota Tributaries</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>258</th> <th>298</th> <th>273</th> <th>254</th> <th>248</th> <th>251</th> <th>239</th> </tr> </thead> <tbody> <tr> <td>CHANDLER</td> <td>15.8</td> <td>15.9</td> <td>15.8</td> <td>17.2</td> <td>18.6</td> <td>20.2</td> <td>21.7</td> </tr> <tr> <td>CHANDLER</td> <td>9.5</td> <td>9.8</td> <td>10.0</td> <td>10.4</td> <td>11.2</td> <td>11.9</td> <td>12.0</td> </tr> <tr> <td>CHANDLER</td> <td>21.2</td> <td>21.9</td> <td>22.7</td> <td>23.9</td> <td>25.1</td> <td>26.7</td> <td>28.1</td> </tr> <tr> <td>CHANDLER</td> <td>19.9</td> <td>22.0</td> <td>22.8</td> <td>23.9</td> <td>25.6</td> <td>27.1</td> <td>28.0</td> </tr> <tr> <td>CHANDLER</td> <td>31.6</td> <td>32.0</td> <td>32.6</td> <td>33.3</td> <td>34.0</td> <td>35.0</td> <td>35.6</td> </tr> <tr> <td>CHANDLER</td> <td>17.0</td> <td>18.0</td> <td>20.3</td> <td>22.0</td> <td>23.9</td> <td>24.7</td> <td>25.7</td> </tr> <tr> <td>CHANDLER</td> <td>26.6</td> <td>27.9</td> <td>29.4</td> <td>31.2</td> <td>34.1</td> <td>37.0</td> <td>39.1</td> </tr> <tr> <td>CHANDLER</td> <td>13.4</td> <td>13.7</td> <td>13.1</td> <td>13.3</td> <td>13.5</td> <td>13.6</td> <td>13.7</td> </tr> <tr> <td>CHANDLER</td> <td>21.6</td> <td>22.6</td> <td>24.3</td> <td>26.9</td> <td>29.5</td> <td>30.4</td> <td>32.9</td> </tr> <tr> <td>CHANDLER</td> <td>45.0</td> <td>45.7</td> <td>45.7</td> <td>46.8</td> <td>48.1</td> <td>50.0</td> <td>51.3</td> </tr> <tr> <td>CHANDLER</td> <td>104.5</td> <td>105.6</td> <td>106.1</td> <td>109.0</td> <td>109.1</td> <td>110.3</td> <td>110.9</td> </tr> <tr> <td>CHANDLER</td> <td>807.4</td> <td>807.7</td> <td>808.4</td> <td>809.5</td> <td>809.9</td> <td>811.5</td> <td>812.0</td> </tr> <tr> <td>CHANDLER</td> <td>14.1</td> <td>14.0</td> <td>13.8</td> <td>14.4</td> <td>15.7</td> <td>16.9</td> <td>18.4</td> </tr> </tbody> </table> <p>North Dakota Tributaries:</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>258</th> <th>298</th> <th>273</th> <th>254</th> <th>248</th> <th>251</th> <th>239</th> </tr> </thead> <tbody> <tr> <td>CHANDLER</td> <td>20.0</td> <td>21.9</td> <td>23.4</td> <td>24.0</td> <td>25.6</td> <td>26.9</td> <td>27.5</td> </tr> <tr> <td>CHANDLER</td> <td>13.7</td> <td>13.7</td> <td>14.6</td> <td>16.0</td> <td>18.0</td> <td>21.7</td> <td>22.7</td> </tr> <tr> <td>CHANDLER</td> <td>15.6</td> <td>16.1</td> <td>16.3</td> <td>20.5</td> <td>22.4</td> <td>25.0</td> <td>28.2</td> </tr> <tr> <td>CHANDLER</td> <td>20.2</td> <td>20.5</td> <td>21.1</td> <td>21.2</td> <td>21.2</td> <td>21.2</td> <td>21.2</td> </tr> <tr> <td>CHANDLER</td> <td>31.2</td> <td>31.9</td> <td>31.3</td> <td>31.3</td> <td>31.3</td> <td>31.3</td> <td>31.3</td> </tr> <tr> <td>CHANDLER</td> <td>81.0</td> <td>81.9</td> <td>82.1</td> <td>82.1</td> <td>82.2</td> <td>82.3</td> <td>82.4</td> </tr> <tr> <td>CHANDLER</td> <td>11.8</td> <td>12.1</td> <td>12.8</td> <td>13.3</td> <td>13.6</td> <td>14.4</td> <td>15.0</td> </tr> <tr> <td>CHANDLER</td> <td>22.0</td> <td>23.1</td> <td>22.5</td> <td>22.8</td> <td>23.2</td> <td>24.0</td> <td>24.1</td> </tr> <tr> <td>CHANDLER</td> <td>5.1</td> <td>5.4</td> <td>5.1</td> <td>5.3</td> <td>5.4</td> <td>5.5</td> <td>5.9</td> </tr> <tr> <td>CHANDLER</td> <td>7.3</td> <td>7.5</td> <td>8.0</td> <td>8.5</td> <td>9.6</td> <td>9.9</td> <td>10.2</td> </tr> <tr> <td>CHANDLER</td> <td>0.5</td> <td>1.0</td> <td>1.1</td> <td>1.4</td> <td>1.6</td> <td>1.7</td> <td>1.9</td> </tr> <tr> <td>CHANDLER</td> <td>8.5</td> <td>8.1</td> <td>8.5</td> <td>8.4</td> <td>8.7</td> <td>8.9</td> <td>9.3</td> </tr> <tr> <td>CHANDLER</td> <td>0.3</td> <td>0.6</td> <td>1.7</td> <td>1.0</td> <td>1.0</td> <td>2.0</td> <td>2.1</td> </tr> </tbody> </table> <p>Notes</p> <ol style="list-style-type: none"> 1. Devils Lake Basin Runoff Risk has not changed much since February. A somewhat above normal rise is expected, from 1 to 2 ft. No update since 7 Mar 2019. Note: Devils Lake is currently about 1.5 feet lower than this time last year. 2. Red River Basin Runoff Risk has jumped markedly. All Red River main stem points will see significantly higher flows, due to significant snow/SWE loads from 9 Mar and 14 Mar storms, over damp and deep frozen antecedent conditions, especially in the far southern Red River Basin, south of Fargo. coupled with much increased runoff potential from the MN tributaries, and Red Lake River Basin. 3. Snowpack/SWE and runoff potential has increased in most all MN tributaries. Central and South tris have seen the highest increase in snow and SWE this past week, including the Red Lake River. Roseau River Basin now has a slight increase to just above normal for runoff risk. 4. ND Wild Rice has a quite High Runoff Risk, with much above normal snowpack. Mid to Lower Sheyenne has gained appreciably in snow and SWE. High Red River levels lead to sig. backwater at Harwood. Some snow/SWE increases on Maple and Rush Rivers as well. Slight increase on Park River, else northeast ND saw least overall gains in SWE. 	LOCATION	258	298	273	254	248	251	239	ROCKWELL	13.9	14.1	14.8	16.7	17.9	18.2	19.0	ROCKWELL	32.1	32.1	33.9	35.1	36.1	37.6	38.6	PARKE	31.0	31.9	36.5	37.9	38.9	40.5	41.4	ROCKWELL	39.0	39.3	39.0	39.8	40.0	40.6	41.2	CHANDLER	45.8	47.5	49.0	50.6	52.7	54.6	56.7	CHANDLER	37.2	37.8	37.8	37.9	38.0	38.1	38.1	CHANDLER	41.8	42.4	43.0	43.7	44.8	45.3	46.0	CHANDLER	51.0	51.9	52.2	53.0	53.7	54.5	54.7	LOCATION	258	298	273	254	248	251	239	CHANDLER	15.8	15.9	15.8	17.2	18.6	20.2	21.7	CHANDLER	9.5	9.8	10.0	10.4	11.2	11.9	12.0	CHANDLER	21.2	21.9	22.7	23.9	25.1	26.7	28.1	CHANDLER	19.9	22.0	22.8	23.9	25.6	27.1	28.0	CHANDLER	31.6	32.0	32.6	33.3	34.0	35.0	35.6	CHANDLER	17.0	18.0	20.3	22.0	23.9	24.7	25.7	CHANDLER	26.6	27.9	29.4	31.2	34.1	37.0	39.1	CHANDLER	13.4	13.7	13.1	13.3	13.5	13.6	13.7	CHANDLER	21.6	22.6	24.3	26.9	29.5	30.4	32.9	CHANDLER	45.0	45.7	45.7	46.8	48.1	50.0	51.3	CHANDLER	104.5	105.6	106.1	109.0	109.1	110.3	110.9	CHANDLER	807.4	807.7	808.4	809.5	809.9	811.5	812.0	CHANDLER	14.1	14.0	13.8	14.4	15.7	16.9	18.4	LOCATION	258	298	273	254	248	251	239	CHANDLER	20.0	21.9	23.4	24.0	25.6	26.9	27.5	CHANDLER	13.7	13.7	14.6	16.0	18.0	21.7	22.7	CHANDLER	15.6	16.1	16.3	20.5	22.4	25.0	28.2	CHANDLER	20.2	20.5	21.1	21.2	21.2	21.2	21.2	CHANDLER	31.2	31.9	31.3	31.3	31.3	31.3	31.3	CHANDLER	81.0	81.9	82.1	82.1	82.2	82.3	82.4	CHANDLER	11.8	12.1	12.8	13.3	13.6	14.4	15.0	CHANDLER	22.0	23.1	22.5	22.8	23.2	24.0	24.1	CHANDLER	5.1	5.4	5.1	5.3	5.4	5.5	5.9	CHANDLER	7.3	7.5	8.0	8.5	9.6	9.9	10.2	CHANDLER	0.5	1.0	1.1	1.4	1.6	1.7	1.9	CHANDLER	8.5	8.1	8.5	8.4	8.7	8.9	9.3	CHANDLER	0.3	0.6	1.7	1.0	1.0	2.0	2.1					
LOCATION	258	298	273	254	248	251	239																																																																																																																																																																																																																																																																																																						
ROCKWELL	13.9	14.1	14.8	16.7	17.9	18.2	19.0																																																																																																																																																																																																																																																																																																						
ROCKWELL	32.1	32.1	33.9	35.1	36.1	37.6	38.6																																																																																																																																																																																																																																																																																																						
PARKE	31.0	31.9	36.5	37.9	38.9	40.5	41.4																																																																																																																																																																																																																																																																																																						
ROCKWELL	39.0	39.3	39.0	39.8	40.0	40.6	41.2																																																																																																																																																																																																																																																																																																						
CHANDLER	45.8	47.5	49.0	50.6	52.7	54.6	56.7																																																																																																																																																																																																																																																																																																						
CHANDLER	37.2	37.8	37.8	37.9	38.0	38.1	38.1																																																																																																																																																																																																																																																																																																						
CHANDLER	41.8	42.4	43.0	43.7	44.8	45.3	46.0																																																																																																																																																																																																																																																																																																						
CHANDLER	51.0	51.9	52.2	53.0	53.7	54.5	54.7																																																																																																																																																																																																																																																																																																						
LOCATION	258	298	273	254	248	251	239																																																																																																																																																																																																																																																																																																						
CHANDLER	15.8	15.9	15.8	17.2	18.6	20.2	21.7																																																																																																																																																																																																																																																																																																						
CHANDLER	9.5	9.8	10.0	10.4	11.2	11.9	12.0																																																																																																																																																																																																																																																																																																						
CHANDLER	21.2	21.9	22.7	23.9	25.1	26.7	28.1																																																																																																																																																																																																																																																																																																						
CHANDLER	19.9	22.0	22.8	23.9	25.6	27.1	28.0																																																																																																																																																																																																																																																																																																						
CHANDLER	31.6	32.0	32.6	33.3	34.0	35.0	35.6																																																																																																																																																																																																																																																																																																						
CHANDLER	17.0	18.0	20.3	22.0	23.9	24.7	25.7																																																																																																																																																																																																																																																																																																						
CHANDLER	26.6	27.9	29.4	31.2	34.1	37.0	39.1																																																																																																																																																																																																																																																																																																						
CHANDLER	13.4	13.7	13.1	13.3	13.5	13.6	13.7																																																																																																																																																																																																																																																																																																						
CHANDLER	21.6	22.6	24.3	26.9	29.5	30.4	32.9																																																																																																																																																																																																																																																																																																						
CHANDLER	45.0	45.7	45.7	46.8	48.1	50.0	51.3																																																																																																																																																																																																																																																																																																						
CHANDLER	104.5	105.6	106.1	109.0	109.1	110.3	110.9																																																																																																																																																																																																																																																																																																						
CHANDLER	807.4	807.7	808.4	809.5	809.9	811.5	812.0																																																																																																																																																																																																																																																																																																						
CHANDLER	14.1	14.0	13.8	14.4	15.7	16.9	18.4																																																																																																																																																																																																																																																																																																						
LOCATION	258	298	273	254	248	251	239																																																																																																																																																																																																																																																																																																						
CHANDLER	20.0	21.9	23.4	24.0	25.6	26.9	27.5																																																																																																																																																																																																																																																																																																						
CHANDLER	13.7	13.7	14.6	16.0	18.0	21.7	22.7																																																																																																																																																																																																																																																																																																						
CHANDLER	15.6	16.1	16.3	20.5	22.4	25.0	28.2																																																																																																																																																																																																																																																																																																						
CHANDLER	20.2	20.5	21.1	21.2	21.2	21.2	21.2																																																																																																																																																																																																																																																																																																						
CHANDLER	31.2	31.9	31.3	31.3	31.3	31.3	31.3																																																																																																																																																																																																																																																																																																						
CHANDLER	81.0	81.9	82.1	82.1	82.2	82.3	82.4																																																																																																																																																																																																																																																																																																						
CHANDLER	11.8	12.1	12.8	13.3	13.6	14.4	15.0																																																																																																																																																																																																																																																																																																						
CHANDLER	22.0	23.1	22.5	22.8	23.2	24.0	24.1																																																																																																																																																																																																																																																																																																						
CHANDLER	5.1	5.4	5.1	5.3	5.4	5.5	5.9																																																																																																																																																																																																																																																																																																						
CHANDLER	7.3	7.5	8.0	8.5	9.6	9.9	10.2																																																																																																																																																																																																																																																																																																						
CHANDLER	0.5	1.0	1.1	1.4	1.6	1.7	1.9																																																																																																																																																																																																																																																																																																						
CHANDLER	8.5	8.1	8.5	8.4	8.7	8.9	9.3																																																																																																																																																																																																																																																																																																						
CHANDLER	0.3	0.6	1.7	1.0	1.0	2.0	2.1																																																																																																																																																																																																																																																																																																						
<p>Flood risk</p> <p>2019 Spring Flood Outlook Above Normal Flood Risk Continues</p> <p>Significant Snowmelt Flooding Expected</p> <ul style="list-style-type: none"> The threat for significant snowmelt flooding continues to be above normal throughout the Red River Basin Major flooding is expected along the mainstem Red River with moderate to major flooding on the tributaries Future temperatures and precipitation (snow + rain) will have a big impact on flood potential The later the snowmelt gets, the more the risk for rapid and/or rainfall enhanced runoff increases Stay tuned for updated information as we get closer to the spring melt 																																																																																																																																																																																																																																																																																																													




	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Percent chance of exceedance</p> <p>2019 Spring Flood Outlook for Red River at Drayton Valid 03-18-2019 through 06-16-2019</p> <p>% Chance of reaching or exceeding this level</p> <p>Minor (32 ft) Action (28 ft)</p> <p>Major (42 ft) Moderate (38 ft)</p> <p>Major (42 ft) : 1997 46.0 ft — 5% 45.3 ft — 10% 44.6 ft — 25% 43.7 ft — 50% 43.0 ft — 75% 32.3 ft — 90% 42.8 ft — 95%</p> <p>Recent Crests</p> <p>River Level: 11.9 ft as of 03-14-2019</p> <p><small>*This outlook graphic shows the most likely river stage range based on the latest forecast. There is a 5% chance of values higher than depicted here. *Major created on 03-14-2019</small></p>					
<p>Hydrologic Outlook/Thaw Updates</p> <p>Hydrologic Outlook/Thaw Updates</p> <ul style="list-style-type: none"> Monday, March 18th <ul style="list-style-type: none"> Favorable melt conditions to persist Daytime temperatures warming into the 40s and 50s will help ripen the snowpack, but low temperatures dipping back below freezing will keep water from entering the river system No major weather systems expected for the next week Thursday, March 21st <ul style="list-style-type: none"> Favorable melt conditions to persist Temperatures above freezing during the day and below freezing at night will start to create some ponding and water moving into local drainage Full blown river flooding and extensive overland flooding not expected to begin through at least early next week March 15th outlook remains valid as recent temperature and precipitation pattern has been accounted for 					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Flood Warning 376 WGUS43 KFGF 271441 FLWFGF BULLETIN - IMMEDIATE BROADCAST REQUESTED Flood Warning National Weather Service Eastern North Dakota/Grand Forks ND 941 AM CDT Wed Mar 27 2019</p> <p>...The National Weather Service in Grand Forks, ND has issued a flood warning (new) for these river locations in Minnesota...North Dakota...</p> <p>new flooding is forecast to occur at... * Wahpeton...on the Red River...in Wilkin and Richland Counties.</p> <p>. A combination of reservoir outflows and localized snowmelt is causing the Wahpeton stage to slowly rise.</p> <p>Forecast temperatures show continued above freezing temperatures over the next 24 hours, followed by cooler temperatures March 29 through 31 More snowmelt is expected today.</p> <p>Below freezing forecast temperatures during March 30-31 should temporarily shut down the melt.</p> <p>A more typical springtime temperature regime, with daytime highs above freezing, and nighttime lows below freezing, is currently forecast for the first week of April. This would result in an ideal slow snowmelt pattern during that time.</p> <p>The current stage is affected by 1 to 2 feet of ice.</p> <p>*** A follow-up flood statement with more detailed flooding information will be issued shortly. ***</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-271541- /O.NEW.KFGF.FL.W.0001.190329T0600Z.190402T1200Z/ /WHNN8.1.SM.190329T0600Z.190330T1200Z.190401T0600Z.NO/ 941 AM CDT Wed Mar 27 2019</p> <p>The National Weather Service in Grand Forks, ND has issued a new Flood Warning for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River * from late Thursday night to Tuesday morning. * At 8:30 AM Wednesday the stage was 10.2 feet. * Minor Flood Stage is 11.0 feet. * For the next 7 days...Minor flooding is forecast. * Forecast...rise above Flood Stage by early Friday morning and continue to rise to near 11.5 feet by Saturday mid-morning. The river will fall below Flood Stage by early Monday morning. <p>&&</p> <p>LAT...LON 4650 9684 4650 9663 4603 9641 4602 9672</p> <p>\$\$</p> <p>HydroTeam FGF</p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful									
<p>Flood statement</p> <p>713 WGU583 KFGF 171652 FLSFGF Flood Statement National Weather Service Eastern North Dakota/Grand Forks ND 1152 AM CDT Wed Apr 17 2019</p> <p>...The flood warning is now cancelled for these river locations in Minnesota...</p> <ul style="list-style-type: none"> * Alvarado...on the Snake River...in Marshall County <p>...The flood warning has been extended for these river locations in North Dakota...Minnesota...</p> <ul style="list-style-type: none"> * Hickson...on the Red River...in Cass County * Sabin...on the South Branch Buffalo River...in Clay County * Hawley...on the Buffalo River...in Clay County * Enderlin...on the Maple River...in Cass and Ransom Counties <p>...The flood warning continues for these river locations in Minnesota...North Dakota...</p> <ul style="list-style-type: none"> * Wahpeton...on the Red River ...in Wilkin and Richland Counties * Fargo...on the Red River ...in Clay and Cass Counties * Halstad...on the Red River ...in Norman and Traill Counties * East Grand Forks...on the Red River ...in Polk and Grand Forks Counties * Oslo...on the Red River ...in Marshall...Polk...Grand Forks and Walsh Counties * Drayton...on the Red River ...in Kittson...Marshall...Pembina and Walsh Counties * Pembina...on the Red River ...in Kittson and Pembina Counties * Dilworth...on the Buffalo River ...in Clay County * Twin Valley...on the Wild Rice River (MN) ...in Norman County * Hendrum...on the Wild Rice River (MN) ...in Norman County * Shelly...on the Marsh River ...in Norman County * Climax...on the Sandhill River ...in Polk County * Crookston...on the Red Lake River ...in Polk County * Hallock...on the Two Rivers River ...in Kittson County * Abercrombie...on the Wild Rice River (ND) ...in Richland County * Kindred...on the Sheyenne River ...in Cass and Richland Counties * West Fargo Diversion...on the Sheyenne River ...in Cass County * Harwood...on the Sheyenne River ...in Cass County * Mapleton...on the Maple River ...in Cass County <p>..This forecast is for a 7-day period...the highest stage indicated may not reflect the crest for this event.</p> <p>Forecasts are updated daily and stage values will change as new weather and river information is used.</p> <p>River forecasts use 24 hours of forecast precipitation. However, depending on the situation, they may include precipitation expected through the next 72 hours.</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHP5/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-181653- /O.CON.KFGF.FL.W.0001.000000T0000Z-000000T0000Z/ /WHNN8.2.SM.190328T0937Z.190401T115Z.000000T0000Z.NO/ 1152 AM CDT Wed Apr 17 2019</p> <p>The Flood Warning continues for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River. * ...until further notice...or until the warning is cancelled. * At 10:30 AM Wednesday the stage was 12.9 feet. * Minor flooding is occurring and during the next 7 days...Moderate flooding is forecast. * Moderate Flood Stage is 13.0 feet. * The river is forecast to crest at 14.5 (give or take one foot) on Sunday morning. * Reservoir outflows upstream are being lessened by the USACE. * Impact Statement(s) - At 15.0 feet, MAJOR FLOOD. Wahpeton storm sewer outlets and Main Street closed. <p>&&</p> <p>Daily 7am CDT/6am CST forecast stage in feet:</p> <table border="1"> <thead> <tr> <th>Date (month/day)</th> <th>Thu 04/18</th> <th>Fri 04/19</th> <th>Sat 04/20</th> <th>Sun 04/21</th> <th>Mon 04/22</th> <th>Tue 04/23</th> <th>Wed 04/24</th> </tr> </thead> <tbody> <tr> <td>...</td></tr> </tbody> </table> <p>...truncated 784 lines...</p>	Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24	...					
Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24							
...														

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation Report – Map of forecast points</p> <p>National Weather Service Grand Forks, ND Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Map of Flood Forecast Points</p>  <p>Map current as of 11:00 am Wednesday, April 17</p> <p>Check here for the latest river forecasts</p> <p>Message of the Day:</p> <ul style="list-style-type: none"> Initial crest: rising river levels continue on the Red River near and north of Drayton. Secondary crest: secondary rises ongoing due to snowmelt/rainfall. Secondary crests should be lower than first for most locations (except possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks). Overland flooding continues along and near the Red River. <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>					
<p>Situation Report - Impacts</p> <p>National Weather Service Grand Forks, ND Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Potential Impacts:</p> <ul style="list-style-type: none"> Snow melt from last week's winter storm continues to cause secondary rises in rivers and tributaries. This snowmelt and ongoing rainfall will also serve to lengthen duration of high water. <ul style="list-style-type: none"> Secondary crest not expected to be higher than previous crest for most locations, with the exception of possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks. Several roads (including I-29) continue to be impacted due to overland and river flooding, especially near the Red River. Backwater is still affecting many locations on the tributaries while few ice impacts remain. Continue to pay attention to closures and notices from local authorities. <p>River Basins Potentially Impacted:</p> <ul style="list-style-type: none"> Initial flood crest: <ul style="list-style-type: none"> The Red River at Drayton is nearing crest while levels continue to rise at Pembina. Secondary flood crest: <ul style="list-style-type: none"> Most locations across the southern portion of the basin are beginning their secondary rise. Backwater from the main stem Red River will continue to keep water levels high, especially between Fargo/Moorhead and the international border. <p>How to Monitor River Levels and Forecasts:</p> <ul style="list-style-type: none"> NWS River Observation/Forecast Page NWS Grand Forks Flood Briefing Page <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																	
<p>Situation Report – Temp and Precip Outlook</p> <p> National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p style="background-color: yellow; text-align: center;">Moderate-Major Flooding Continues</p> <p style="text-align: center;">Temperature Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Highs</th> <th>Lows (Overnight)</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>48-51</td> <td>35-38</td> </tr> <tr> <td>Thursday, April 18</td> <td>52-56</td> <td>31-34</td> </tr> <tr> <td>Friday, April 19</td> <td>59-65</td> <td>41-46</td> </tr> <tr> <td>Saturday, April 20</td> <td>56-66</td> <td>35-40</td> </tr> <tr> <td>Sunday, April 21</td> <td>52-57</td> <td>31-36</td> </tr> <tr> <td>Monday, April 22</td> <td>50-57</td> <td>32-37</td> </tr> </tbody> </table> <p style="text-align: center;">Precipitation Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Type</th> <th>Liquid Amounts</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>Rain and Snow</td> <td>0"-0.50"</td> <td>Mainly southern RRV</td> </tr> <tr> <td>Thursday, April 18</td> <td>Showers/Thunder</td> <td>0"-0.10"</td> <td>Eastern ND/NW MN</td> </tr> <tr> <td>Friday, April 19</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Saturday, April 20</td> <td>Showers</td> <td>0"-0.20"</td> <td>Along/north Hwy 2</td> </tr> <tr> <td>Sunday, April 21</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Monday, April 22</td> <td>None</td> <td>0"</td> <td></td> </tr> </tbody> </table> <p>Click for a description of this product Click to evaluate this product</p>	Day of the Week	Highs	Lows (Overnight)	Wednesday, April 17	48-51	35-38	Thursday, April 18	52-56	31-34	Friday, April 19	59-65	41-46	Saturday, April 20	56-66	35-40	Sunday, April 21	52-57	31-36	Monday, April 22	50-57	32-37	Day of the Week	Type	Liquid Amounts	Location	Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV	Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN	Friday, April 19	None	0"		Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2	Sunday, April 21	None	0"		Monday, April 22	None	0"		✓				
Day of the Week	Highs	Lows (Overnight)																																																				
Wednesday, April 17	48-51	35-38																																																				
Thursday, April 18	52-56	31-34																																																				
Friday, April 19	59-65	41-46																																																				
Saturday, April 20	56-66	35-40																																																				
Sunday, April 21	52-57	31-36																																																				
Monday, April 22	50-57	32-37																																																				
Day of the Week	Type	Liquid Amounts	Location																																																			
Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV																																																			
Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN																																																			
Friday, April 19	None	0"																																																				
Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2																																																			
Sunday, April 21	None	0"																																																				
Monday, April 22	None	0"																																																				
<p>Situation report – 24 hour precipitation</p> <p> National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p style="background-color: yellow; text-align: center;">Moderate-Major Flooding Continues</p> <p>Precipitation over the last 24 hours in the River Forecasts (7 am Tue to 7 am Wed)</p>  <p>24 hour forecast precipitation in the River Forecasts (7 am Wed to 7 am Thu)</p>  <p>Click for a description of this product Click to evaluate this product</p>	✓																																																					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation report – Message of the Day</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Message of the Day: Widespread river flooding and localized overland flooding continues. Red River continues to rise near and north of Drayton while southern portions of the valley are seeing re-rises due to snowmelt and ongoing rainfall.</p>  <p>Water on Demers Ave near the Sorlie Bridge in East Grand Forks MN on 4/12/19. Photo courtesy of Carl Jones.</p> <p>Quick facts you should know about flooding:</p> <ul style="list-style-type: none"> • Flooding can be caused by heavy rain, rapid snow melt, ice jamming, levee overtopping, dam failure, or from wastewater systems. • It only takes 8 inches of fast-moving water to knock you off your feet. • A car can be moved in as little as 2 feet of water. • 90% of all U.S. natural disasters declared by the President involve flooding. <p>Preparedness:</p> <p>Know your risk: Are you in a flood-prone area? Know your zone: www.fema.gov/flood-zones</p> <ul style="list-style-type: none"> - You must purchase separate flood insurance for your home. There is a 30 day wait period between when you buy a flood insurance policy and when it goes into effect. Plan ahead! - A Flood Watch is issued when conditions are favorable for flooding. Time to prepare! - A Flood Warning is issued when flooding is imminent or occurring. Time to act! <p>Never drive into flood waters! Turn around, don't drown!</p> <p>Find out more information on our web page: www.weather.gov/fgf/</p> <p>Follow us on Facebook and Twitter for more up to date information:  @NWSGrandForks  @NWSGrandForks</p> <p>Building a Weather-Ready Nation</p> <p>Click for a description of this product Click to evaluate this product</p>	✓				

7. What changes might you recommend for any of the products shown?

HONE

8. Which media would you use to find NWS information about the risk of flooding near you? Please circle all that apply:

Facebook
 Twitter
 Internet
 Other: Phone App

9. Which digital platform are you most likely to use to access NWS resources? Circle one.

Smartphone Tablet Laptop Desktop Other: _____

10. Was anything in the session confusing? Yes No

If Yes, please explain:

11. What improvements could be made in the format or content of this session?

12. Additional comments:

Thank you for participating!

Survey Questions - Post-Focus Group Session Survey

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0690-0030. Without this approval, we could not conduct this post-focus group survey collection. Public reporting for this information collection is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Nurture Nature Center at: 518 Northampton Street, Easton, PA 18042, Attn: Rachel Hogan Carr, Executive Director, rhogan@nurturenature.org.

1. Please rate your agreement with the following statements about the forum.

Please check ONE box for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The information was clearly presented.		X			
I felt comfortable voicing my opinion.	X				
I know more about the National Weather Service (NWS) resources.	X				
I feel I could use NWS resources to judge my risk in an extreme weather event.		X			

2. What are the biggest barriers you face in using NWS flood forecast and warning products? Some examples to consider are lack of computer or phone, lack of internet access, language barriers, NWS products too difficult to understand, or other factors.

Some products are too difficult. Emergency flood alerts aren't made massively attention grabbing, they are easy to scroll past

3. Our goal today was to gather feedback to improve NWS flood forecast and warning tools. Beyond the questions asked today, what else would be important to know about how you gather/would use NWS information about extreme weather risks and your intended actions?

more localized info, multiple measurement sites

4. After attending today's session, how likely are you to:

Please check ONE box for each statement.

	Very Likely	Somewhat Likely	Neither likely nor unlikely	Somewhat Unlikely	Unlikely
Create or revise plans to deal with extreme weather events using NWS products.	X				
Share what I learned about NWS products today with others.		X			
Seek NWS information about extreme weather risks.	X				
Use NWS products and information in your decision-making	X				

5. Do you prefer text-based or graphical/visual NWS products in trying to understand your level of risk from flooding? Circle one.

Text

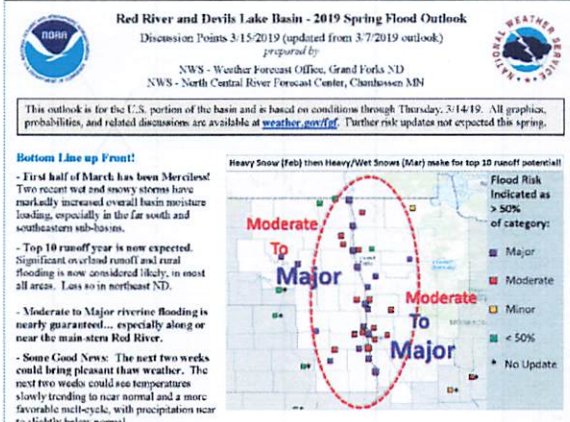

~~Graphics~~

Combined text and graphics

Please explain.


faster to read, has minimal text with only SUPER important info


6. Please rate the weather products discussed today based on their usefulness to you in assessing your flood situation.

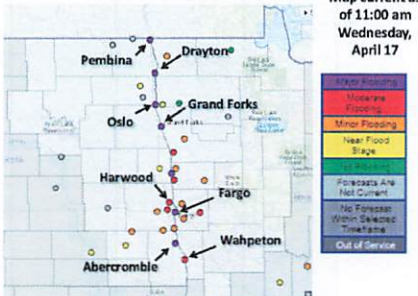
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Spring Flood Outlook</p>  <p>Red River and Devils Lake Basin - 2019 Spring Flood Outlook Discussion Points 3/15/2019 (updated from 3/7/2019 outlook) prepared by: NWS - Weather Forecast Office, Grand Forks ND NWS - North Central River Forecast Center, Chanhassen MN</p> <p>This outlook is for the U.S. portion of the basin and is based on conditions through Thursday, 3/14/19. All graphics, probabilities, and related discussions are available at weather.gov/fuf. Further risk updates not expected this spring.</p> <p>Bottom Line up Front!</p> <ul style="list-style-type: none"> - First half of March has been Merciful! Two recent wet and snowy storms have markedly increased overall basin moisture loading, especially in the far south and southeastern sub-basins. - Top 10 runoff year is now expected. Significant on-load runoff and rural flooding is now considered likely, in most all areas. Less so in northeast ND. - Moderate to Major riverine flooding is nearly guaranteed... especially along or near the main-stem Red River. - Some Good News: The next two weeks could bring pleasant thaw weather. The next two weeks could see temperatures slowly trending to near normal and a more favorable melt-cycle, with precipitation near to slightly below normal. - Less Favorable News: No guarantee that the end of March and beginning of April will cooperate. Experimental Week 3-4 Outlook, issued 8 March 2019, indicated another cold snap to start April. Storminess factor is uncertain. <p>Long Story Short: Significant snowmelt flooding is likely, and runs from above to much above long-term historical averages across the Red River and Devils Lake Basins (U.S. portions).</p> <p>Key Snowmelt Flood Components:</p> <ol style="list-style-type: none"> 1. Base Streamflow: Still frozen, with near normal flow north, slightly above normal flow south. Note that base streamflows remain much below the record flood years of 1997, 2009, 2010, and 2011. 2. Soil Moisture at Freeze-up: Above normal south, near normal central, below normal far north. Soil moisture is also much below that which preceded the record flood years of 1997, 2009, 2010, and 2011. 3. Frost Depth: Deeper than normal everywhere. Frost is quite deep, from 36 to 48 inches, with river-ice and lake-ice thicknesses above seasonal normal ranges. Ice jams should be more of a risk on tributaries, less on the mainstem Red. 4. Winter Snowpack/SWE: above/much above normal. Since Dec 1st, snowfall has run from 100-200 percent of normal - least in northeast ND and most from northcentral MN into the central and southern RRV. The water content (SWC) ranges from 1.5 to 3.5 inches above normal in the central and southern Red River Basin. 5. Total Precipitation, Oct 1st to Mar 15th is Very High. Total precipitation (rain and snow-water) from Oct 1st through Mar 15th ranged from 2-4 inches above the long-term normal for most of the central and southern Red River Basin. <p>News! Along with our flood partners, we've developed a display graphic which relates the current flood outlook to our historical flood levels (for now, just along the mainstem Red River). Check it out at: https://www.weather.gov/fuf/FV23</p> <p>News! There is an updated CRED web-based app, for citizen flood-related reporting. Check it out at: https://cred.org.uk</p>					
<p>Snow/rain Forecasts</p> <p>March 13-14: "Crippling" Blizzard Heavy wet snow combined with very strong winds to "shut down" the region. Heavy rain some freezing rain in the southeast. Bomb cyclone, impacts across Plains.</p> 					



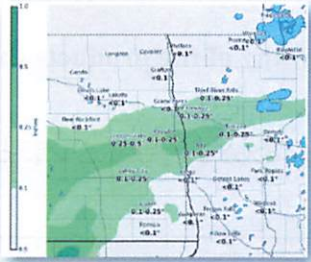
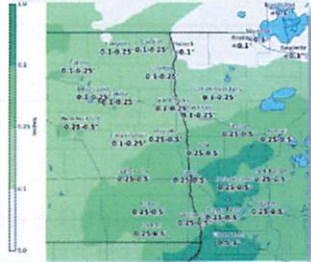
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																																																																																																																																																																																																																																																																								
<p>Long range probabilistic outlook</p> <p>DEVILS LAKE & STUMP LAKE... (last updated) Valid March 4, 2019 - September 19, 2019</p> <p>LONGRANGE PROBABILISTIC OUTLOOK Valid March 4, 2019 - September 19, 2019</p> <p>Color code: Below, Minor, Moderate, Major, Flood of Record</p> <p>RED RIVER AND TRIBUTARIES... Long Range Probabilistic Outlook Valid March 14, 2019 - June 14, 2019</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> </tr> </thead> <tbody> <tr><td>MINNETONKA</td><td>13.9</td><td>14.1</td><td>14.8</td><td>16.7</td><td>17.0</td><td>18.1</td><td>19.0</td></tr> <tr><td>YOKUM</td><td>32.1</td><td>32.9</td><td>33.9</td><td>35.1</td><td>36.1</td><td>37.6</td><td>38.6</td></tr> <tr><td>FARGO</td><td>35.8</td><td>37.9</td><td>38.5</td><td>37.9</td><td>38.9</td><td>40.3</td><td>41.4</td></tr> <tr><td>MOHAWK</td><td>38.0</td><td>39.3</td><td>39.0</td><td>38.4</td><td>39.0</td><td>40.6</td><td>41.2</td></tr> <tr><td>CAMP FOREST</td><td>45.8</td><td>47.5</td><td>49.0</td><td>50.6</td><td>52.7</td><td>54.6</td><td>56.7</td></tr> <tr><td>OSLO</td><td>37.2</td><td>37.8</td><td>37.8</td><td>37.9</td><td>38.0</td><td>38.1</td><td>38.1</td></tr> <tr><td>GRAND FORKS</td><td>43.0</td><td>42.4</td><td>43.0</td><td>43.7</td><td>44.6</td><td>45.3</td><td>46.0</td></tr> <tr><td>WHEELER</td><td>51.0</td><td>51.9</td><td>52.2</td><td>53.0</td><td>53.7</td><td>54.6</td><td>54.7</td></tr> </tbody> </table> <p>Minnesota Tributaries</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> </tr> </thead> <tbody> <tr><td>JACKSON</td><td>15.6</td><td>16.0</td><td>16.8</td><td>17.2</td><td>18.6</td><td>20.2</td><td>22.7</td></tr> <tr><td>WILLOW RIVER</td><td>9.5</td><td>9.8</td><td>10.0</td><td>10.4</td><td>11.2</td><td>11.9</td><td>12.0</td></tr> <tr><td>CHANDLER</td><td>23.2</td><td>23.9</td><td>22.7</td><td>23.9</td><td>25.1</td><td>26.7</td><td>29.1</td></tr> <tr><td>WILD RICE RIVER</td><td>19.9</td><td>22.0</td><td>23.0</td><td>23.9</td><td>25.6</td><td>27.1</td><td>28.0</td></tr> <tr><td>SPRING VALLEY</td><td>31.6</td><td>32.0</td><td>32.6</td><td>33.3</td><td>34.0</td><td>35.0</td><td>35.6</td></tr> <tr><td>ARMOUR</td><td>17.0</td><td>18.0</td><td>20.1</td><td>22.0</td><td>23.9</td><td>24.7</td><td>25.7</td></tr> <tr><td>DEER HILL RIVER</td><td>26.6</td><td>27.9</td><td>29.4</td><td>31.2</td><td>34.1</td><td>37.0</td><td>39.1</td></tr> <tr><td>CLARK</td><td>12.4</td><td>12.7</td><td>13.1</td><td>13.3</td><td>13.5</td><td>13.8</td><td>13.7</td></tr> <tr><td>WOLF CREEK</td><td>23.6</td><td>23.8</td><td>24.3</td><td>24.9</td><td>25.5</td><td>26.4</td><td>27.9</td></tr> <tr><td>LONGVIEW</td><td>45.0</td><td>45.7</td><td>46.7</td><td>46.8</td><td>48.3</td><td>50.0</td><td>53.1</td></tr> <tr><td>WABASH</td><td>104.5</td><td>105.0</td><td>108.1</td><td>109.0</td><td>109.1</td><td>110.3</td><td>110.9</td></tr> <tr><td>TRINITY</td><td>807.4</td><td>807.7</td><td>808.4</td><td>809.5</td><td>809.9</td><td>811.5</td><td>812.0</td></tr> <tr><td>TRINITY</td><td>14.1</td><td>14.8</td><td>15.8</td><td>16.4</td><td>17.7</td><td>19.0</td><td>19.4</td></tr> </tbody> </table> <p>North Dakota Tributaries</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> </tr> </thead> <tbody> <tr><td>WILD RICE RIVER</td><td>20.0</td><td>21.9</td><td>23.4</td><td>24.0</td><td>25.6</td><td>26.9</td><td>27.5</td></tr> <tr><td>SHENYEN</td><td>13.2</td><td>13.9</td><td>14.6</td><td>16.0</td><td>19.8</td><td>21.7</td><td>22.7</td></tr> <tr><td>CLARK</td><td>22.6</td><td>23.8</td><td>24.3</td><td>25.2</td><td>27.4</td><td>29.0</td><td>29.2</td></tr> <tr><td>CHANDLER</td><td>20.2</td><td>20.9</td><td>21.1</td><td>21.2</td><td>21.2</td><td>21.2</td><td>21.2</td></tr> <tr><td>WOLF CREEK</td><td>31.2</td><td>31.9</td><td>31.3</td><td>31.3</td><td>31.3</td><td>31.3</td><td>31.3</td></tr> <tr><td>GRAND FORKS</td><td>91.8</td><td>91.9</td><td>92.1</td><td>92.1</td><td>92.2</td><td>92.3</td><td>92.4</td></tr> <tr><td>WOLF RIVER</td><td>13.8</td><td>13.1</td><td>13.8</td><td>13.3</td><td>13.6</td><td>14.4</td><td>15.0</td></tr> <tr><td>BEAUFORT</td><td>22.0</td><td>22.9</td><td>22.5</td><td>22.9</td><td>23.2</td><td>24.0</td><td>24.1</td></tr> <tr><td>DOUGLAS</td><td>5.1</td><td>5.4</td><td>5.1</td><td>5.3</td><td>5.4</td><td>5.5</td><td>5.7</td></tr> <tr><td>WABASH</td><td>7.3</td><td>7.8</td><td>8.0</td><td>8.5</td><td>9.6</td><td>9.9</td><td>10.2</td></tr> <tr><td>PARK RIVER</td><td>10.5</td><td>11.0</td><td>11.1</td><td>11.1</td><td>11.1</td><td>11.9</td><td>12.4</td></tr> <tr><td>WABASH</td><td>5.9</td><td>6.1</td><td>6.1</td><td>7.1</td><td>7.7</td><td>11.0</td><td>12.0</td></tr> <tr><td>WABASH</td><td>6.3</td><td>10.4</td><td>11.7</td><td>13.0</td><td>14.2</td><td>20.5</td><td>21.2</td></tr> </tbody> </table> <p>Notes</p> <ol style="list-style-type: none"> Devils Lake Basin Runoff Risk has not changed much since February. A somewhat above normal rise is expected, from 1 to 2 ft. No update since 7 Mar 2019. Red River Basin Runoff Risk has jumped markedly. All Red River main-stem points will see significantly higher flows, due to significant snow/SWE loads from 9 Mar and 14 Mar storms, over damp and deep frozen antecedent conditions, especially in the far southern Red River Basin, south of Fargo. Snowpack/SWE and runoff potential has increased in most all tributaries. Central and South trib have seen the highest increase in snow and SWE this past week, including the Red Lake River. Roseau River Basin now has a slight increase to just above normal for runoff risk. ND Wild Rice has a quite High Runoff Risk, with much above normal snowpack. Mid to Lower Shyenne has gained appreciably in snow and SWE. High Red River levels lead to sig. backwater at Harwood. Some snow/SWE increases on Maple and Rush Rivers as well. Slight increase on Park River, else northeast ND saw least overall gains in SWE. 	LOCATION	95%	90%	75%	50%	25%	10%	5%	MINNETONKA	13.9	14.1	14.8	16.7	17.0	18.1	19.0	YOKUM	32.1	32.9	33.9	35.1	36.1	37.6	38.6	FARGO	35.8	37.9	38.5	37.9	38.9	40.3	41.4	MOHAWK	38.0	39.3	39.0	38.4	39.0	40.6	41.2	CAMP FOREST	45.8	47.5	49.0	50.6	52.7	54.6	56.7	OSLO	37.2	37.8	37.8	37.9	38.0	38.1	38.1	GRAND FORKS	43.0	42.4	43.0	43.7	44.6	45.3	46.0	WHEELER	51.0	51.9	52.2	53.0	53.7	54.6	54.7	LOCATION	95%	90%	75%	50%	25%	10%	5%	JACKSON	15.6	16.0	16.8	17.2	18.6	20.2	22.7	WILLOW RIVER	9.5	9.8	10.0	10.4	11.2	11.9	12.0	CHANDLER	23.2	23.9	22.7	23.9	25.1	26.7	29.1	WILD RICE RIVER	19.9	22.0	23.0	23.9	25.6	27.1	28.0	SPRING VALLEY	31.6	32.0	32.6	33.3	34.0	35.0	35.6	ARMOUR	17.0	18.0	20.1	22.0	23.9	24.7	25.7	DEER HILL RIVER	26.6	27.9	29.4	31.2	34.1	37.0	39.1	CLARK	12.4	12.7	13.1	13.3	13.5	13.8	13.7	WOLF CREEK	23.6	23.8	24.3	24.9	25.5	26.4	27.9	LONGVIEW	45.0	45.7	46.7	46.8	48.3	50.0	53.1	WABASH	104.5	105.0	108.1	109.0	109.1	110.3	110.9	TRINITY	807.4	807.7	808.4	809.5	809.9	811.5	812.0	TRINITY	14.1	14.8	15.8	16.4	17.7	19.0	19.4	LOCATION	95%	90%	75%	50%	25%	10%	5%	WILD RICE RIVER	20.0	21.9	23.4	24.0	25.6	26.9	27.5	SHENYEN	13.2	13.9	14.6	16.0	19.8	21.7	22.7	CLARK	22.6	23.8	24.3	25.2	27.4	29.0	29.2	CHANDLER	20.2	20.9	21.1	21.2	21.2	21.2	21.2	WOLF CREEK	31.2	31.9	31.3	31.3	31.3	31.3	31.3	GRAND FORKS	91.8	91.9	92.1	92.1	92.2	92.3	92.4	WOLF RIVER	13.8	13.1	13.8	13.3	13.6	14.4	15.0	BEAUFORT	22.0	22.9	22.5	22.9	23.2	24.0	24.1	DOUGLAS	5.1	5.4	5.1	5.3	5.4	5.5	5.7	WABASH	7.3	7.8	8.0	8.5	9.6	9.9	10.2	PARK RIVER	10.5	11.0	11.1	11.1	11.1	11.9	12.4	WABASH	5.9	6.1	6.1	7.1	7.7	11.0	12.0	WABASH	6.3	10.4	11.7	13.0	14.2	20.5	21.2				X	
LOCATION	95%	90%	75%	50%	25%	10%	5%																																																																																																																																																																																																																																																																																																						
MINNETONKA	13.9	14.1	14.8	16.7	17.0	18.1	19.0																																																																																																																																																																																																																																																																																																						
YOKUM	32.1	32.9	33.9	35.1	36.1	37.6	38.6																																																																																																																																																																																																																																																																																																						
FARGO	35.8	37.9	38.5	37.9	38.9	40.3	41.4																																																																																																																																																																																																																																																																																																						
MOHAWK	38.0	39.3	39.0	38.4	39.0	40.6	41.2																																																																																																																																																																																																																																																																																																						
CAMP FOREST	45.8	47.5	49.0	50.6	52.7	54.6	56.7																																																																																																																																																																																																																																																																																																						
OSLO	37.2	37.8	37.8	37.9	38.0	38.1	38.1																																																																																																																																																																																																																																																																																																						
GRAND FORKS	43.0	42.4	43.0	43.7	44.6	45.3	46.0																																																																																																																																																																																																																																																																																																						
WHEELER	51.0	51.9	52.2	53.0	53.7	54.6	54.7																																																																																																																																																																																																																																																																																																						
LOCATION	95%	90%	75%	50%	25%	10%	5%																																																																																																																																																																																																																																																																																																						
JACKSON	15.6	16.0	16.8	17.2	18.6	20.2	22.7																																																																																																																																																																																																																																																																																																						
WILLOW RIVER	9.5	9.8	10.0	10.4	11.2	11.9	12.0																																																																																																																																																																																																																																																																																																						
CHANDLER	23.2	23.9	22.7	23.9	25.1	26.7	29.1																																																																																																																																																																																																																																																																																																						
WILD RICE RIVER	19.9	22.0	23.0	23.9	25.6	27.1	28.0																																																																																																																																																																																																																																																																																																						
SPRING VALLEY	31.6	32.0	32.6	33.3	34.0	35.0	35.6																																																																																																																																																																																																																																																																																																						
ARMOUR	17.0	18.0	20.1	22.0	23.9	24.7	25.7																																																																																																																																																																																																																																																																																																						
DEER HILL RIVER	26.6	27.9	29.4	31.2	34.1	37.0	39.1																																																																																																																																																																																																																																																																																																						
CLARK	12.4	12.7	13.1	13.3	13.5	13.8	13.7																																																																																																																																																																																																																																																																																																						
WOLF CREEK	23.6	23.8	24.3	24.9	25.5	26.4	27.9																																																																																																																																																																																																																																																																																																						
LONGVIEW	45.0	45.7	46.7	46.8	48.3	50.0	53.1																																																																																																																																																																																																																																																																																																						
WABASH	104.5	105.0	108.1	109.0	109.1	110.3	110.9																																																																																																																																																																																																																																																																																																						
TRINITY	807.4	807.7	808.4	809.5	809.9	811.5	812.0																																																																																																																																																																																																																																																																																																						
TRINITY	14.1	14.8	15.8	16.4	17.7	19.0	19.4																																																																																																																																																																																																																																																																																																						
LOCATION	95%	90%	75%	50%	25%	10%	5%																																																																																																																																																																																																																																																																																																						
WILD RICE RIVER	20.0	21.9	23.4	24.0	25.6	26.9	27.5																																																																																																																																																																																																																																																																																																						
SHENYEN	13.2	13.9	14.6	16.0	19.8	21.7	22.7																																																																																																																																																																																																																																																																																																						
CLARK	22.6	23.8	24.3	25.2	27.4	29.0	29.2																																																																																																																																																																																																																																																																																																						
CHANDLER	20.2	20.9	21.1	21.2	21.2	21.2	21.2																																																																																																																																																																																																																																																																																																						
WOLF CREEK	31.2	31.9	31.3	31.3	31.3	31.3	31.3																																																																																																																																																																																																																																																																																																						
GRAND FORKS	91.8	91.9	92.1	92.1	92.2	92.3	92.4																																																																																																																																																																																																																																																																																																						
WOLF RIVER	13.8	13.1	13.8	13.3	13.6	14.4	15.0																																																																																																																																																																																																																																																																																																						
BEAUFORT	22.0	22.9	22.5	22.9	23.2	24.0	24.1																																																																																																																																																																																																																																																																																																						
DOUGLAS	5.1	5.4	5.1	5.3	5.4	5.5	5.7																																																																																																																																																																																																																																																																																																						
WABASH	7.3	7.8	8.0	8.5	9.6	9.9	10.2																																																																																																																																																																																																																																																																																																						
PARK RIVER	10.5	11.0	11.1	11.1	11.1	11.9	12.4																																																																																																																																																																																																																																																																																																						
WABASH	5.9	6.1	6.1	7.1	7.7	11.0	12.0																																																																																																																																																																																																																																																																																																						
WABASH	6.3	10.4	11.7	13.0	14.2	20.5	21.2																																																																																																																																																																																																																																																																																																						
<p>Flood risk</p> <p>2019 Spring Flood Outlook Above Normal Flood Risk Continues</p> <p>Significant Snowmelt Flooding Expected</p> <ul style="list-style-type: none"> The threat for significant snowmelt flooding continues to be above normal throughout the Red River Basin. Major flooding is expected along the mainstem Red River with moderate to major flooding on the tributaries. Future temperatures and precipitation (snow + rain) will have a big impact on flood potential. The later the snowmelt gets, the more the risk for rapid and/or rainfall enhanced runoff increases. Stay tuned for updated information as we get closer to the spring melt. 				X																																																																																																																																																																																																																																																																																																									







	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Percent chance of exceedance</p> <p>2019 Spring Flood Outlook for Red River at Drayton Valid 03-18-2019 through 06-16-2019</p>		X			
<p>Hydrologic Outlook/Thaw Updates</p> <p>Hydrologic Outlook/Thaw Updates</p> <ul style="list-style-type: none"> Monday, March 18th <ul style="list-style-type: none"> Favorable melt conditions to persist Daytime temperatures warming into the 40s and 50s will help ripen the snowpack, but low temperatures dipping back below freezing will keep water from entering the river system No major weather systems expected for the next week Thursday, March 21st <ul style="list-style-type: none"> Favorable melt conditions to persist Temperatures above freezing during the day and below freezing at night will start to create some ponding and water moving into local drainage Full blown river flooding and extensive overland flooding not expected to begin through at least early next week March 15th outlook remains valid as recent temperature and precipitation pattern has been accounted for 				X	

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Flood Warning 376 WGUS43 KFGF 271441 FLWFGF BULLETIN - IMMEDIATE BROADCAST REQUESTED Flood Warning National Weather Service Eastern North Dakota/Grand Forks ND 941 AM CDT Wed Mar 27 2019</p> <p>...The National Weather Service in Grand Forks, ND has issued a flood warning (new) for these river locations in Minnesota...North Dakota...</p> <p>new flooding is forecast to occur at... * Wahpeton...on the Red River...in Wilkin and Richland Counties.</p> <p>. A combination of reservoir outflows and localized snowmelt is causing the Wahpeton stage to slowly rise.</p> <p>Forecast temperatures show continued above freezing temperatures over the next 24 hours, followed by cooler temperatures March 29 through 31 More snowmelt is expected today.</p> <p>Below freezing forecast temperatures during March 30-31 should temporarily shut down the melt.</p> <p>A more typical springtime temperature regime, with daytime highs above freezing, and nighttime lows below freezing, is currently forecast for the first week of April. This would result in an ideal slow snowmelt pattern during that time.</p> <p>The current stage is affected by 1 to 2 feet of ice.</p> <p>*** A follow-up flood statement with more detailed flooding information will be issued shortly. ***</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-271541- /O.NEW.KFGF.FL.W.0001.190329T0600Z-190402T1200Z/ /WHNNB.1.SM.190329T0600Z.190330T1200Z.190401T0600Z.NO/ 941 AM CDT Wed Mar 27 2019</p> <p>The National Weather Service in Grand Forks, ND has issued a new Flood Warning for... * ...Wahpeton...on the Red River * from late Thursday night to Tuesday morning. * At 8:30 AM Wednesday the stage was 10.2 feet. * Minor Flood Stage is 11.0 feet. * For the next 7 days...Minor flooding is forecast. * Forecast...rise above Flood Stage by early Friday morning and continue to rise to near 11.5 feet by Saturday mid-morning. The river will fall below Flood Stage by early Monday morning.</p> <p>&&</p> <p>LAT...LON 4650 9684 4650 9663 4603 9641 4602 9672</p> <p>\$\$</p> <p>HydroTeam FGF</p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																	
<p>Flood statement</p> <p>713 WGU583 KFGF 171652 FLSFGF Flood Statement National Weather Service Eastern North Dakota/Grand Forks ND 1152 AM CDT Wed Apr 17 2019</p> <p>...The flood warning is now cancelled for these river locations in Minnesota...</p> <ul style="list-style-type: none"> * Alvarado...on the Snake River...in Marshall County <p>...The flood warning has been extended for these river locations in North Dakota...Minnesota...</p> <ul style="list-style-type: none"> * Hickson...on the Red River...in Cass County * Sabin...on the South Branch Buffalo River...in Clay County * Hawley...on the Buffalo River...in Clay County * Enderlin...on the Maple River...in Cass and Ransom Counties <p>...The flood warning continues for these river locations in Minnesota...North Dakota...</p> <ul style="list-style-type: none"> * Wahpeton...on the Red River ...in Wilkin and Richland Counties * Fargo...on the Red River ...in Clay and Cass Counties * Halstad...on the Red River ...in Norman and Traill Counties * East Grand Forks...on the Red River ...in Polk and Grand Forks Counties * Oslo...on the Red River ...in Marshall...Polk...Grand Forks and Walsh Counties * Drayton...on the Red River ...in Kittson...Marshall...Pembina and Walsh Counties * Pembina...on the Red River ...in Kittson and Pembina Counties * Dilworth...on the Buffalo River ...in Clay County * Twin Valley...on the Wild Rice River (MN) ...in Norman County * Hendrum...on the Wild Rice River (MN) ...in Norman County * Shelly...on the Marsh River ...in Norman County * Climax...on the Sandhill River ...in Polk County * Crookston...on the Red Lake River ...in Polk County * Hallock...on the Two Rivers River ...in Kittson County * Abercrombie...on the Wild Rice River (ND) ...in Richland County * Kindred...on the Sheyenne River ...in Cass and Richland Counties * West Fargo Diversion...on the Sheyenne River ...in Cass County * Harwood...on the Sheyenne River ...in Cass County * Mapleton...on the Maple River ...in Cass County <p>..This forecast is for a 7-day period...the highest stage indicated may not reflect the crest for this event.</p> <p>Forecasts are updated daily and stage values will change as new weather and river information is used.</p> <p>River forecasts use 24 hours of forecast precipitation. However, depending on the situation, they may include precipitation expected through the next 72 hours.</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPs/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-181653- /O.CON.KFGF.FL.W.0001.00000T0000Z-00000T0000Z/ /WHNNA.2.SM.190328T0937Z.190401T115Z.00000T0000Z.NO/ 1152 AM CDT Wed Apr 17 2019</p> <p>The Flood Warning continues for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River. * until further notice...or until the warning is cancelled. * At 10:30 AM Wednesday the stage was 12.9 feet. * Minor flooding is occurring and during the next 7 days...Moderate flooding is forecast. * Moderate Flood Stage is 13.0 feet. * The river is forecast to crest at 14.5 (give or take one foot) on Sunday morning. * Reservoir outflows upstream are being lessened by the USACE. * Impact Statement(s) - At 15.0 feet, MAJOR FLOOD. Wahpeton storm sewer outlets and Main Street closed. <p>&&</p> <p>Daily 7am CDT/6am CST forecast stage in feet:</p> <table border="1"> <thead> <tr> <th>Date (month/day)</th> <th>Thu 04/18</th> <th>Fri 04/19</th> <th>Sat 04/20</th> <th>Sun 04/21</th> <th>Mon 04/22</th> <th>Tue 04/23</th> <th>Wed 04/24</th> </tr> </thead> <tbody> <tr> <td>...</td></tr> <tr> <td>...truncated 784 lines...</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24truncated 784 lines...												
Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24															
...																						
...truncated 784 lines...																						

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation Report – Map of forecast points</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Map of Flood Forecast Points</p>  <p>Map current as of 11:00 am Wednesday, April 17</p> <p>Check here for the latest river forecasts</p> <p>Message of the Day:</p> <ul style="list-style-type: none"> Initial crest: rising river levels continue on the Red River near and north of Drayton. Secondary crest: secondary rises ongoing due to snowmelt/rainfall. Secondary crests should be lower than first for most locations (except possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks). Overland flooding continues along and near the Red River. <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>					
<p>Situation Report - Impacts</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Potential Impacts:</p> <ul style="list-style-type: none"> Snow melt from last week's winter storm continues to cause secondary rises in rivers and tributaries. This snowmelt and ongoing rainfall will also serve to lengthen duration of high water. <ul style="list-style-type: none"> Secondary crest not expected to be higher than previous crest for most locations, with the exception of possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks. Several roads (including I-29) continue to be impacted due to overland and river flooding, especially near the Red River. Backwater is still affecting many locations on the tributaries while few ice impacts remain. Continue to pay attention to closures and notices from local authorities. <p>River Basins Potentially Impacted:</p> <ul style="list-style-type: none"> Initial flood crest: <ul style="list-style-type: none"> The Red River at Drayton is nearing crest while levels continue to rise at Pembina. Secondary flood crest: <ul style="list-style-type: none"> Most locations across the southern portion of the basin are beginning their secondary rise. Backwater from the main stem Red River will continue to keep water levels high, especially between Fargo/Moorhead and the international border. <p>How to Monitor River Levels and Forecasts:</p> <ul style="list-style-type: none"> NWS River Observation/Forecast Page NWS Grand Forks Flood Briefing Page <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																	
<p>Situation Report – Temp and Precip Outlook</p>  <p>National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p style="background-color: yellow; text-align: center;">Moderate-Major Flooding Continues</p> <p style="text-align: center;">Temperature Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Highs</th> <th>Lows (Overnight)</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>46-51</td> <td>35-38</td> </tr> <tr> <td>Thursday, April 18</td> <td>52-56</td> <td>31-34</td> </tr> <tr> <td>Friday, April 19</td> <td>59-65</td> <td>41-46</td> </tr> <tr> <td>Saturday, April 20</td> <td>56-66</td> <td>35-40</td> </tr> <tr> <td>Sunday, April 21</td> <td>52-57</td> <td>31-36</td> </tr> <tr> <td>Monday, April 22</td> <td>50-57</td> <td>32-37</td> </tr> </tbody> </table> <p style="text-align: center;">Precipitation Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Type</th> <th>Liquid Amounts</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>Rain and Snow</td> <td>0"-0.50"</td> <td>Mainly southern RRV</td> </tr> <tr> <td>Thursday, April 18</td> <td>Showers/Thunder</td> <td>0"-0.10"</td> <td>Eastern ND/NW MN</td> </tr> <tr> <td>Friday, April 19</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Saturday, April 20</td> <td>Showers</td> <td>0"-0.20"</td> <td>Along/north Hwy 2</td> </tr> <tr> <td>Sunday, April 21</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Monday, April 22</td> <td>None</td> <td>0"</td> <td></td> </tr> </tbody> </table> <p><small>Click for a description of this product Click to evaluate this product</small></p>	Day of the Week	Highs	Lows (Overnight)	Wednesday, April 17	46-51	35-38	Thursday, April 18	52-56	31-34	Friday, April 19	59-65	41-46	Saturday, April 20	56-66	35-40	Sunday, April 21	52-57	31-36	Monday, April 22	50-57	32-37	Day of the Week	Type	Liquid Amounts	Location	Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV	Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN	Friday, April 19	None	0"		Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2	Sunday, April 21	None	0"		Monday, April 22	None	0"		X				
Day of the Week	Highs	Lows (Overnight)																																																				
Wednesday, April 17	46-51	35-38																																																				
Thursday, April 18	52-56	31-34																																																				
Friday, April 19	59-65	41-46																																																				
Saturday, April 20	56-66	35-40																																																				
Sunday, April 21	52-57	31-36																																																				
Monday, April 22	50-57	32-37																																																				
Day of the Week	Type	Liquid Amounts	Location																																																			
Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV																																																			
Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN																																																			
Friday, April 19	None	0"																																																				
Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2																																																			
Sunday, April 21	None	0"																																																				
Monday, April 22	None	0"																																																				
<p>Situation report – 24 hour precipitation</p>  <p>National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p style="background-color: yellow; text-align: center;">Moderate-Major Flooding Continues</p> <p>Precipitation over the last 24 hours in the River Forecasts (7 am Tue to 7 am Wed)</p>  <p>24 hour forecast precipitation in the River Forecasts (7 am Wed to 7 am Thu)</p>  <p><small>Click for a description of this product Click to evaluate this product</small></p>	X																																																					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation report – Message of the Day</p> <p> National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Message of the Day: Widespread river flooding and localized overland flooding continues. Red River continues to rise near and north of Drayton while southern portions of the valley are seeing re-rises due to snowmelt and ongoing rainfall.</p> <p> </p> <p><small>Water on Demers Ave near the Sortie Bridge in East Grand Forks MN on 4/12/19. Photo courtesy of Carl Jones.</small></p> <p>Quick facts you should know about flooding:</p> <ul style="list-style-type: none"> • Flooding can be caused by heavy rain, rapid snow melt, ice jamming, levee overtopping, dam failure, or from wastewater systems. • It only takes 6 inches of fast-moving water to knock you off your feet. • A car can be moved in as little as 2 feet of water. • 90% of all U.S. natural disasters declared by the President involve flooding. <p>Preparedness:</p> <p>Know your risk: Are you in a flood-prone area? Know your zone: www.fema.gov/flood-zones</p> <ul style="list-style-type: none"> - You must purchase separate flood insurance for your home. There is a 30 day wait period between when you buy a flood insurance policy and when it goes into effect. Plan ahead! - A Flood Watch is issued when conditions are favorable for flooding. Time to prepare! - A Flood Warning is issued when flooding is imminent or occurring. Time to act! <p>Never drive into flood waters! Turn around, don't drown!</p> <p>Find out more information on our web page: www.weather.gov/faf/</p> <p>Follow us on Facebook and Twitter for more up to date information:  @NWSGrandForks  @NWSGrandForks</p> <p> Building a Weather-Ready Nation</p> <p><small>Click for a description of this product Click to evaluate this product</small></p>		X			

7. What changes might you recommend for any of the products shown?

More localized measurements

8. Which media would you use to find NWS information about the risk of flooding near you? Please circle all that apply:

Facebook Twitter Internet Other: _____

9. Which digital platform are you most likely to use to access NWS resources? Circle one.

Smartphone Tablet Laptop Desktop Other: _____

10. Was anything in the session confusing? Yes No

If Yes, please explain:

N/A

11. What improvements could be made in the format or content of this session?

N/A

12. Additional comments:

N/A

Thank you for participating!

Survey Questions - Post-Focus Group Session Survey

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0690-0030. Without this approval, we could not conduct this post-focus group survey collection. Public reporting for this information collection is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Nurture Nature Center at: 518 Northampton Street, Easton, PA 18042, Attn: Rachel Hogan Carr, Executive Director, rhogan@nurturenature.org.

1. Please rate your agreement with the following statements about the forum.

Please check ONE box for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The information was clearly presented.	X				
I felt comfortable voicing my opinion.	X				
I know more about the National Weather Service (NWS) resources.		X			
I feel I could use NWS resources to judge my risk in an extreme weather event.	X				

2. What are the biggest barriers you face in using NWS flood forecast and warning products? Some examples to consider are lack of computer or phone, lack of internet access, language barriers, NWS products too difficult to understand, or other factors.

lack of prediction of heavy rains
 facebook dependent around here w/ no local TV or radio

3. Our goal today was to gather feedback to improve NWS flood forecast and warning tools. Beyond the questions asked today, what else would be important to know about how you gather/would use NWS information about extreme weather risks and your intended actions?

~~_____~~

 Not sure

4. After attending today's session, how likely are you to:

Please check ONE box for each statement.

	Very Likely	Somewhat Likely	Neither likely nor unlikely	Somewhat Unlikely	Unlikely
Create or revise plans to deal with extreme weather events using NWS products.		X			
Share what I learned about NWS products today with others.	X				
Seek NWS information about extreme weather risks.	X				
Use NWS products and information in your decision-making	X				

5. Do you prefer text-based or graphical/visual NWS products in trying to understand your level of risk from flooding? Circle one.

Text

Graphics

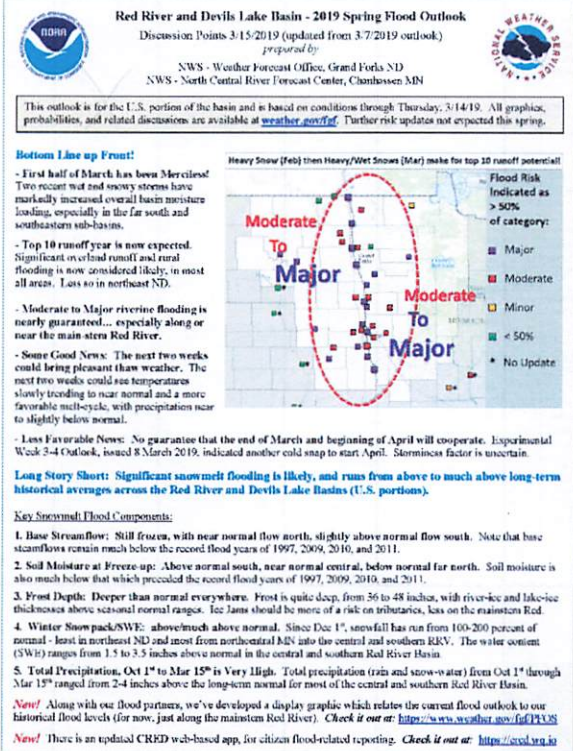
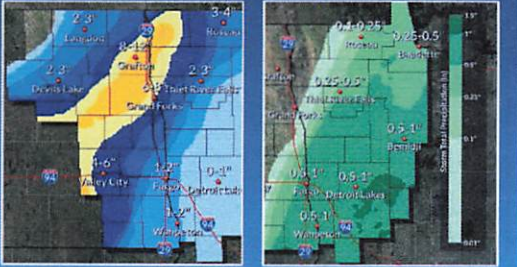
Combined text and graphics

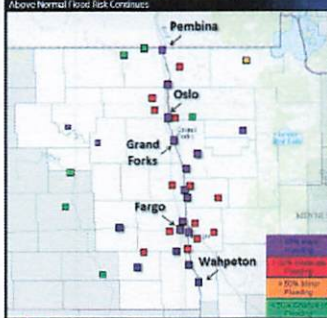
Please explain.

text but short and concise

I hate video updates, they're hard to absorb the info and take too long to watch and you can't listen to them well in public

6. Please rate the weather products discussed today based on their usefulness to you in assessing your flood situation.

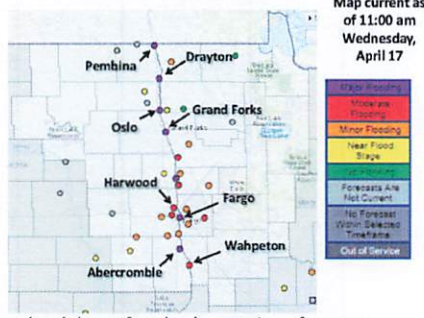
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Spring Flood Outlook</p>  <p>Red River and Devils Lake Basin - 2019 Spring Flood Outlook Discussion: Points 3/15/2019 (updated from 3/7/2019 outlook) prepared by: NWS - Weather Forecast Office, Grand Forks ND NWS - North Central River Forecast Center, Chambliss MN</p> <p>This outlook is for the U.S. portion of the basin and is based on conditions through Thursday, 3/14/19. All graphics, probabilities, and related discussions are available at weather.gov/rlf. Further risk updates not expected this spring.</p> <p>Bottom Line up Front!</p> <ul style="list-style-type: none"> - First half of March has been Merciful! Two recent wet and snowy storms have markedly increased overall basin moisture loading, especially in the far south and southeastern sub-basins. - Top 10 runoff year is now expected. Significant on-land runoff and rural flooding is now considered likely, in most all areas. Less so in northeast ND. - Moderate to Major riverine flooding is nearly guaranteed... especially along or near the main stem Red River. - Some Good News: The next two weeks could bring pleasant thaw weather. The next two weeks could see temperatures slowly trending to near normal and a more favorable melt-cycle, with precipitation near to slightly below normal. - Less Favorable News: No guarantee that the end of March and beginning of April will cooperate. Experimental Week 3-4 Outlook, issued 8 March 2019, indicated another cold snap to start April. Storminess factor is uncertain. <p>Long Story Short: Significant snowmelt flooding is likely, and runs from above to much above long-term historical averages across the Red River and Devils Lake Basins (U.S. portions).</p> <p>Key Snowmelt Flood Components:</p> <ol style="list-style-type: none"> 1. Base Streamflow: Still frozen, with near normal flow north, slightly above normal flow south. Note that base streamflows remain much below the record flood years of 1997, 2009, 2010, and 2011. 2. Soil Moisture at Freeze up: Above normal south, near normal central, below normal far north. Soil moisture is also much below that which preceded the record flood years of 1997, 2009, 2010, and 2011. 3. Frost Depth: Deeper than normal everywhere. Frost is quite deep, from 36 to 48 inches, with river-ice and lake-ice thicknesses above seasonal normal ranges. Ice jams should be more of a risk on tributaries, less on the mainstem Red. 4. Winter Snowpack/SWE: above/much above normal. Since Dec 1st, snowfall has run from 100-200 percent of normal - least in northeast ND and most from northcentral MN into the central and southern RRV. The water content (SWE) ranges from 1.5 to 3.5 inches above normal in the central and southern Red River Basin. <p>S. Total Precipitation, Oct 1st to Mar 15th is Very High. Total precipitation (rain and snow-water) from Oct 1st through Mar 15th ranged from 2-4 inches above the long-term normal for most of the central and southern Red River Basin.</p> <p>New! Along with our flood partners, we've developed a display graphic which relates the current flood outlook to our historical flood levels (for now, just along the mainstem Red River). Check it out at: https://www.weather.gov/rlf/F328</p> <p>New! There is an updated CRFD web-based app, for citizen flood-related reporting. Check it out at: https://cool.riv.r</p>					
<p>Snow/rain Forecasts</p> <p>March 13-14: "Crippling" Blizzard Heavy wet snow combined with very strong winds to "shut down" the region. Heavy rain some freezing rain in the southeast. Bomb cyclone, impacts across Plains.</p> 					



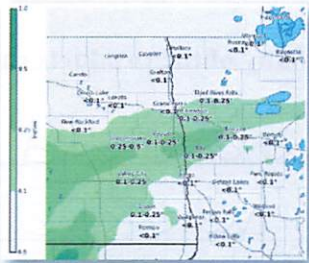
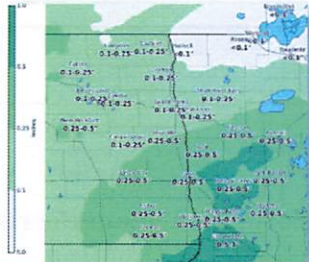
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																																																																																																																																																																																														
<p>Long range probabilistic outlook</p> <p>DEVILS LAKE & STUMP LAKE... Long Range Probabilistic Outlook <small>(Last updated) Valid March 4, 2019 - September 29, 2019</small></p> <p>LOCATION: 293 294 295 296 297 298 299</p> <p>CHIEF DAM 1449.1 1449.2 1449.3 1449.4 1449.5 1449.6 1449.7 1449.8 EAST STUMP LAKE 1449.1 1449.2 1449.3 1449.4 1449.5 1449.6 1449.7 1449.8</p> <p>The current surface of Devils Lake and Stump Lake are -446.2 ft. MSL.</p> <p>Color code: Below Minor Moderate Major Flood of Record</p> <p>RED RIVER AND TRIBUTARIES... Long Range Probabilistic Outlook <small>Valid March 13, 2019 - June 16, 2019</small></p> <table border="1"> <thead> <tr> <th>Location</th> <th>Below</th> <th>Minor</th> <th>Moderate</th> <th>Major</th> <th>Flood of Record</th> </tr> </thead> <tbody> <tr><td>ROCKY MOUNTAIN</td><td>13.9</td><td>14.1</td><td>14.8</td><td>15.7</td><td>17.0</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>32.1</td><td>32.3</td><td>33.9</td><td>35.1</td><td>36.1</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>33.0</td><td>33.9</td><td>36.5</td><td>37.9</td><td>40.5</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>38.0</td><td>38.3</td><td>39.0</td><td>38.6</td><td>40.0</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>45.0</td><td>47.5</td><td>49.0</td><td>50.6</td><td>52.7</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>37.2</td><td>37.5</td><td>37.8</td><td>37.9</td><td>38.0</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>41.8</td><td>42.4</td><td>43.0</td><td>43.7</td><td>44.8</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>51.0</td><td>51.7</td><td>52.2</td><td>53.0</td><td>53.7</td></tr> </tbody> </table> <p>Minnesota Tributaries:</p> <table border="1"> <thead> <tr> <th>Location</th> <th>Below</th> <th>Minor</th> <th>Moderate</th> <th>Major</th> <th>Flood of Record</th> </tr> </thead> <tbody> <tr><td>ROCKY MOUNTAIN</td><td>15.8</td><td>16.0</td><td>16.8</td><td>17.2</td><td>18.6</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>9.5</td><td>9.8</td><td>10.0</td><td>10.4</td><td>11.2</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>21.2</td><td>21.3</td><td>22.7</td><td>23.9</td><td>25.1</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>15.9</td><td>16.0</td><td>17.8</td><td>18.9</td><td>19.1</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>31.6</td><td>32.0</td><td>32.6</td><td>33.3</td><td>34.0</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>17.0</td><td>18.0</td><td>20.3</td><td>22.0</td><td>23.9</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>26.6</td><td>27.9</td><td>29.1</td><td>31.2</td><td>34.4</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>13.4</td><td>13.7</td><td>13.1</td><td>13.3</td><td>13.6</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>31.6</td><td>32.5</td><td>24.3</td><td>24.9</td><td>28.5</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>45.0</td><td>45.7</td><td>45.7</td><td>46.8</td><td>48.1</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>104.0</td><td>105.0</td><td>108.1</td><td>109.0</td><td>110.3</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>807.4</td><td>807.7</td><td>808.4</td><td>809.5</td><td>812.5</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>14.1</td><td>14.0</td><td>15.6</td><td>16.4</td><td>17.7</td></tr> </tbody> </table> <p>North Dakota Tributaries:</p> <table border="1"> <thead> <tr> <th>Location</th> <th>Below</th> <th>Minor</th> <th>Moderate</th> <th>Major</th> <th>Flood of Record</th> </tr> </thead> <tbody> <tr><td>ROCKY MOUNTAIN</td><td>20.0</td><td>21.9</td><td>23.1</td><td>24.8</td><td>26.9</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>13.2</td><td>13.0</td><td>14.6</td><td>16.0</td><td>17.7</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>15.6</td><td>16.4</td><td>18.3</td><td>20.8</td><td>22.4</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>20.2</td><td>20.5</td><td>21.1</td><td>21.2</td><td>21.2</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>21.2</td><td>21.9</td><td>21.3</td><td>21.3</td><td>21.3</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>91.0</td><td>91.9</td><td>92.1</td><td>92.1</td><td>92.2</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>11.8</td><td>12.1</td><td>12.8</td><td>13.3</td><td>14.4</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>22.0</td><td>22.9</td><td>23.6</td><td>23.8</td><td>24.0</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>5.1</td><td>5.4</td><td>6.0</td><td>6.5</td><td>6.6</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>7.3</td><td>7.5</td><td>8.0</td><td>8.5</td><td>8.9</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>0.5</td><td>1.0</td><td>1.1</td><td>1.4</td><td>1.7</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>5.5</td><td>6.1</td><td>6.5</td><td>7.4</td><td>7.7</td></tr> <tr><td>ROCKY MOUNTAIN</td><td>0.3</td><td>1.0</td><td>1.7</td><td>1.6</td><td>2.0</td></tr> </tbody> </table> <p>Notes:</p> <ol style="list-style-type: none"> Devils Lake Basin Runoff Risk has not changed much since February. A somewhat above normal rise is expected, from 1 to 2 ft. No update since 7 Mar 2019. Note: Devils Lake is currently about 1.5 feet lower than this time last year. Red River Basin Runoff Risk has jumped markedly. All Red River main stem points will see significantly higher flows, due to significant snow/SWE loads from 9 Mar and 14 Mar storms, over damp and deep frozen antecedent conditions, especially in the far southern Red River Basin, south of Fargo. - conged with much increased runoff potential from the MN tributaries, and Red Lake River Basin. Snowpack/SWE and runoff potential has increased in most all MN tributaries. Central and South tribis have seen the highest increase in snow and SWE this past week, including the Red Lake River. Roseau River Basin now has a slight increase to just above normal for runoff risk. ND Wild Rice has a quite High Runoff Risk, with much above normal snowpack. Mid to Lower Sheyenne has gained appreciably in snow and SWE. High Red River levels lead to sig. backwater at Harwood. Some snow/SWE increases on Maple and Rush Rivers as well. Slight increase on Park River, else northeast ND saw least overall gains in SWE. 	Location	Below	Minor	Moderate	Major	Flood of Record	ROCKY MOUNTAIN	13.9	14.1	14.8	15.7	17.0	ROCKY MOUNTAIN	32.1	32.3	33.9	35.1	36.1	ROCKY MOUNTAIN	33.0	33.9	36.5	37.9	40.5	ROCKY MOUNTAIN	38.0	38.3	39.0	38.6	40.0	ROCKY MOUNTAIN	45.0	47.5	49.0	50.6	52.7	ROCKY MOUNTAIN	37.2	37.5	37.8	37.9	38.0	ROCKY MOUNTAIN	41.8	42.4	43.0	43.7	44.8	ROCKY MOUNTAIN	51.0	51.7	52.2	53.0	53.7	Location	Below	Minor	Moderate	Major	Flood of Record	ROCKY MOUNTAIN	15.8	16.0	16.8	17.2	18.6	ROCKY MOUNTAIN	9.5	9.8	10.0	10.4	11.2	ROCKY MOUNTAIN	21.2	21.3	22.7	23.9	25.1	ROCKY MOUNTAIN	15.9	16.0	17.8	18.9	19.1	ROCKY MOUNTAIN	31.6	32.0	32.6	33.3	34.0	ROCKY MOUNTAIN	17.0	18.0	20.3	22.0	23.9	ROCKY MOUNTAIN	26.6	27.9	29.1	31.2	34.4	ROCKY MOUNTAIN	13.4	13.7	13.1	13.3	13.6	ROCKY MOUNTAIN	31.6	32.5	24.3	24.9	28.5	ROCKY MOUNTAIN	45.0	45.7	45.7	46.8	48.1	ROCKY MOUNTAIN	104.0	105.0	108.1	109.0	110.3	ROCKY MOUNTAIN	807.4	807.7	808.4	809.5	812.5	ROCKY MOUNTAIN	14.1	14.0	15.6	16.4	17.7	Location	Below	Minor	Moderate	Major	Flood of Record	ROCKY MOUNTAIN	20.0	21.9	23.1	24.8	26.9	ROCKY MOUNTAIN	13.2	13.0	14.6	16.0	17.7	ROCKY MOUNTAIN	15.6	16.4	18.3	20.8	22.4	ROCKY MOUNTAIN	20.2	20.5	21.1	21.2	21.2	ROCKY MOUNTAIN	21.2	21.9	21.3	21.3	21.3	ROCKY MOUNTAIN	91.0	91.9	92.1	92.1	92.2	ROCKY MOUNTAIN	11.8	12.1	12.8	13.3	14.4	ROCKY MOUNTAIN	22.0	22.9	23.6	23.8	24.0	ROCKY MOUNTAIN	5.1	5.4	6.0	6.5	6.6	ROCKY MOUNTAIN	7.3	7.5	8.0	8.5	8.9	ROCKY MOUNTAIN	0.5	1.0	1.1	1.4	1.7	ROCKY MOUNTAIN	5.5	6.1	6.5	7.4	7.7	ROCKY MOUNTAIN	0.3	1.0	1.7	1.6	2.0				X	
Location	Below	Minor	Moderate	Major	Flood of Record																																																																																																																																																																																																																														
ROCKY MOUNTAIN	13.9	14.1	14.8	15.7	17.0																																																																																																																																																																																																																														
ROCKY MOUNTAIN	32.1	32.3	33.9	35.1	36.1																																																																																																																																																																																																																														
ROCKY MOUNTAIN	33.0	33.9	36.5	37.9	40.5																																																																																																																																																																																																																														
ROCKY MOUNTAIN	38.0	38.3	39.0	38.6	40.0																																																																																																																																																																																																																														
ROCKY MOUNTAIN	45.0	47.5	49.0	50.6	52.7																																																																																																																																																																																																																														
ROCKY MOUNTAIN	37.2	37.5	37.8	37.9	38.0																																																																																																																																																																																																																														
ROCKY MOUNTAIN	41.8	42.4	43.0	43.7	44.8																																																																																																																																																																																																																														
ROCKY MOUNTAIN	51.0	51.7	52.2	53.0	53.7																																																																																																																																																																																																																														
Location	Below	Minor	Moderate	Major	Flood of Record																																																																																																																																																																																																																														
ROCKY MOUNTAIN	15.8	16.0	16.8	17.2	18.6																																																																																																																																																																																																																														
ROCKY MOUNTAIN	9.5	9.8	10.0	10.4	11.2																																																																																																																																																																																																																														
ROCKY MOUNTAIN	21.2	21.3	22.7	23.9	25.1																																																																																																																																																																																																																														
ROCKY MOUNTAIN	15.9	16.0	17.8	18.9	19.1																																																																																																																																																																																																																														
ROCKY MOUNTAIN	31.6	32.0	32.6	33.3	34.0																																																																																																																																																																																																																														
ROCKY MOUNTAIN	17.0	18.0	20.3	22.0	23.9																																																																																																																																																																																																																														
ROCKY MOUNTAIN	26.6	27.9	29.1	31.2	34.4																																																																																																																																																																																																																														
ROCKY MOUNTAIN	13.4	13.7	13.1	13.3	13.6																																																																																																																																																																																																																														
ROCKY MOUNTAIN	31.6	32.5	24.3	24.9	28.5																																																																																																																																																																																																																														
ROCKY MOUNTAIN	45.0	45.7	45.7	46.8	48.1																																																																																																																																																																																																																														
ROCKY MOUNTAIN	104.0	105.0	108.1	109.0	110.3																																																																																																																																																																																																																														
ROCKY MOUNTAIN	807.4	807.7	808.4	809.5	812.5																																																																																																																																																																																																																														
ROCKY MOUNTAIN	14.1	14.0	15.6	16.4	17.7																																																																																																																																																																																																																														
Location	Below	Minor	Moderate	Major	Flood of Record																																																																																																																																																																																																																														
ROCKY MOUNTAIN	20.0	21.9	23.1	24.8	26.9																																																																																																																																																																																																																														
ROCKY MOUNTAIN	13.2	13.0	14.6	16.0	17.7																																																																																																																																																																																																																														
ROCKY MOUNTAIN	15.6	16.4	18.3	20.8	22.4																																																																																																																																																																																																																														
ROCKY MOUNTAIN	20.2	20.5	21.1	21.2	21.2																																																																																																																																																																																																																														
ROCKY MOUNTAIN	21.2	21.9	21.3	21.3	21.3																																																																																																																																																																																																																														
ROCKY MOUNTAIN	91.0	91.9	92.1	92.1	92.2																																																																																																																																																																																																																														
ROCKY MOUNTAIN	11.8	12.1	12.8	13.3	14.4																																																																																																																																																																																																																														
ROCKY MOUNTAIN	22.0	22.9	23.6	23.8	24.0																																																																																																																																																																																																																														
ROCKY MOUNTAIN	5.1	5.4	6.0	6.5	6.6																																																																																																																																																																																																																														
ROCKY MOUNTAIN	7.3	7.5	8.0	8.5	8.9																																																																																																																																																																																																																														
ROCKY MOUNTAIN	0.5	1.0	1.1	1.4	1.7																																																																																																																																																																																																																														
ROCKY MOUNTAIN	5.5	6.1	6.5	7.4	7.7																																																																																																																																																																																																																														
ROCKY MOUNTAIN	0.3	1.0	1.7	1.6	2.0																																																																																																																																																																																																																														
<p>Flood risk</p> <p>2019 Spring Flood Outlook <small>Above Normal Flood Risk Continues</small></p>  <p>Significant Snowmelt Flooding Expected</p> <ul style="list-style-type: none"> The threat for significant snowmelt flooding continues to be above normal throughout the Red River Basin Major flooding is expected along the mainstem Red River with moderate to major flooding on the tributaries Future temperatures and precipitation (snow + rain) will have a big impact on flood potential The later the snowmelt gets, the more the risk for rapid and/or rainfall enhanced runoff increases Stay tuned for updated information as we get closer to the spring melt 				X																																																																																																																																																																																																																															







	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Percent chance of exceedance</p> <p>2019 Spring Flood Outlook for Red River at Drayton Valid 03-18-2019 through 06-16-2019 % Chance of reaching or exceeding this level</p>					
<p>Hydrologic Outlook/Thaw Updates</p> <div style="background-color: #0056b3; color: white; padding: 10px;"> <p>Hydrologic Outlook/Thaw Updates</p> <ul style="list-style-type: none"> Monday, March 18th <ul style="list-style-type: none"> Favorable melt conditions to persist Daytime temperatures warming into the 40s and 50s will help ripen the snowpack, but low temperatures dipping back below freezing will keep water from entering the river system No major weather systems expected for the next week Thursday, March 21st <ul style="list-style-type: none"> Favorable melt conditions to persist Temperatures above freezing during the day and below freezing at night will start to create some ponding and water moving into local drainage Full blown river flooding and extensive overland flooding not expected to begin through at least early next week March 15th outlook remains valid as recent temperature and precipitation pattern has been accounted for </div>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Flood Warning 376 WGUS43 KFGF 271441 FLWFGF BULLETIN - IMMEDIATE BROADCAST REQUESTED Flood Warning National Weather Service Eastern North Dakota/Grand Forks ND 941 AM CDT Wed Mar 27 2019</p> <p>...The National Weather Service in Grand Forks, ND has issued a flood warning (new) for these river locations in Minnesota...North Dakota...</p> <p>new flooding is forecast to occur at... * Wahpeton...on the Red River...in Wilkin and Richland Counties.</p> <p>. A combination of reservoir outflows and localized snowmelt is causing the Wahpeton stage to slowly rise.</p> <p>Forecast temperatures show continued above freezing temperatures over the next 24 hours, followed by cooler temperatures March 29 through 31 More snowmelt is expected today.</p> <p>Below freezing forecast temperatures during March 30-31 should temporarily shut down the melt.</p> <p>A more typical springtime temperature regime, with daytime highs above freezing, and nighttime lows below freezing, is currently forecast for the first week of April. This would result in an ideal slow snowmelt pattern during that time.</p> <p>The current stage is affected by 1 to 2 feet of ice.</p> <p>*** A follow-up flood statement with more detailed flooding information will be issued shortly. ***</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-271541- /O.NEW.KFGF.FL.W.0001.190329T0600Z-190402T1200Z/ /WHNN8.1.SM.190329T0600Z.190330T1200Z.190401T0600Z.NO/ 941 AM CDT Wed Mar 27 2019</p> <p>The National Weather Service in Grand Forks, ND has issued a new Flood Warning for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River * from late Thursday night to Tuesday morning. * At 8:30 AM Wednesday the stage was 10.2 feet. * Minor Flood Stage is 11.0 feet. * For the next 7 days...Minor flooding is forecast. * Forecast...rise above Flood Stage by early Friday morning and continue to rise to near 11.5 feet by Saturday mid-morning. The river will fall below Flood Stage by early Monday morning. <p>&&</p> <p>LAT...LON 4650 9684 4650 9663 4603 9641 4602 9672</p> <p>\$\$</p> <p>HydroTeam FGF</p>			X		

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful									
<p>Flood statement</p> <p>713 WGUS83 KFGF 171652 FLSFGF Flood Statement National Weather Service Eastern North Dakota/Grand Forks ND 1152 AM CDT Wed Apr 17 2019</p> <p>...The flood warning is now cancelled for these river locations in Minnesota...</p> <ul style="list-style-type: none"> * Alvarado...on the Snake River...in Marshall County <p>...The flood warning has been extended for these river locations in North Dakota...Minnesota...</p> <ul style="list-style-type: none"> * Hickson...on the Red River...in Cass County * Sabin...on the South Branch Buffalo River...in Clay County * Hawley...on the Buffalo River...in Clay County * Enderlin...on the Maple River...in Cass and Ransom Counties <p>...The flood warning continues for these river locations in Minnesota...North Dakota...</p> <ul style="list-style-type: none"> * Wahpeton...on the Red River...in Wilkin and Richland Counties * Fargo...on the Red River...in Clay and Cass Counties * Halstad...on the Red River...in Norman and Traill Counties * East Grand Forks...on the Red River...in Polk and Grand Forks Counties * Oslo...on the Red River...in Marshall...Polk...Grand Forks and Walsh Counties * Drayton...on the Red River...in Kittson...Marshall...Pembina and Walsh Counties * Pembina...on the Red River...in Kittson and Pembina Counties * Dilworth...on the Buffalo River...in Clay County * Twin Valley...on the Wild Rice River (MN)...in Norman County * Hendrum...on the Wild Rice River (MN)...in Norman County * Shelly...on the Marsh River...in Norman County * Climax...on the Sandhill River...in Polk County * Crookston...on the Red Lake River...in Polk County * Hallock...on the Two Rivers River...in Kittson County * Abercrombie...on the Wild Rice River (ND)...in Richland County * Kindred...on the Sheyenne River...in Cass and Richland Counties * West Fargo Diversion...on the Sheyenne River...in Cass County * Harwood...on the Sheyenne River...in Cass County * Mapleton...on the Maple River...in Cass County <p>.This forecast is for a 7-day period...the highest stage indicated may not reflect the crest for this event.</p> <p>Forecasts are updated daily and stage values will change as new weather and river information is used.</p> <p>River forecasts use 24 hours of forecast precipitation. However, depending on the situation, they may include precipitation expected through the next 72 hours.</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPs/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC977-181653- /O.CDN.KFGF.FL.W.0001.00000T0000Z-00000T0000Z/ /WHNN.2.SM.190328T0937Z.190401T1115Z.00000T0000Z.NO/ 1152 AM CDT Wed Apr 17 2019</p> <p>The Flood warning continues for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River. * until further notice...or until the warning is cancelled. * At 10:30 AM Wednesday the stage was 12.9 feet. * Minor flooding is occurring and during the next 7 days...Moderate flooding is forecast. * Moderate Flood Stage is 13.0 feet. * The river is forecast to crest at 14.5 (give or take one foot) on Sunday morning. * Reservoir outflows upstream are being lessened by the USACE. * Impact Statement(s) - At 15.0 feet, MAJOR FLOOD. Wahpeton storm sewer outlets and Main Street closed. <p>&&</p> <p>Daily 7am CDT/6am CST forecast stage in feet:</p> <table border="1"> <thead> <tr> <th>Date (month/day)</th> <th>Thu 04/18</th> <th>Fri 04/19</th> <th>Sat 04/20</th> <th>Sun 04/21</th> <th>Mon 04/22</th> <th>Tue 04/23</th> <th>Wed 04/24</th> </tr> </thead> <tbody> <tr> <td>...</td></tr> </tbody> </table> <p>...truncated 784 lines...</p>	Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24	...			X		
Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24							
...														

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation Report – Map of forecast points</p> <p>National Weather Service Grand Forks, ND Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Map of Flood Forecast Points</p>  <p>Map current as of 11:00 am Wednesday, April 17</p> <p>Check here for the latest river forecasts</p> <p>Message of the Day:</p> <ul style="list-style-type: none"> Initial crest: rising river levels continue on the Red River near and north of Drayton. Secondary crest: secondary rises ongoing due to snowmelt/rainfall. Secondary crests should be lower than first for most locations (except possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks). Overland flooding continues along and near the Red River. <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>					
<p>Situation Report - Impacts</p> <p>National Weather Service Grand Forks, ND Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Potential Impacts:</p> <ul style="list-style-type: none"> Snow melt from last week's winter storm continues to cause secondary rises in rivers and tributaries. This snowmelt and ongoing rainfall will also serve to lengthen duration of high water. <ul style="list-style-type: none"> Secondary crest not expected to be higher than previous crest for most locations, with the exception of possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks. Several roads (including I-29) continue to be impacted due to overland and river flooding, especially near the Red River. Backwater is still affecting many locations on the tributaries while few ice impacts remain. Continue to pay attention to closures and notices from local authorities. <p>River Basins Potentially Impacted:</p> <ul style="list-style-type: none"> Initial flood crest: <ul style="list-style-type: none"> The Red River at Drayton is nearing crest while levels continue to rise at Pembina. Secondary flood crest: <ul style="list-style-type: none"> Most locations across the southern portion of the basin are beginning their secondary rise. Backwater from the main stem Red River will continue to keep water levels high, especially between Fargo/Moorhead and the international border. <p>How to Monitor River Levels and Forecasts:</p> <ul style="list-style-type: none"> NWS River Observation/Forecast Page NWS Grand Forks Flood Briefing Page <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																	
<p>Situation Report – Temp and Precip Outlook</p>  <p>National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p style="background-color: yellow; text-align: center;">Moderate-Major Flooding Continues</p> <p style="text-align: center;">Temperature Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Highs</th> <th>Lows (Overnight)</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>48-51</td> <td>35-38</td> </tr> <tr> <td>Thursday, April 18</td> <td>52-56</td> <td>31-34</td> </tr> <tr> <td>Friday, April 19</td> <td>59-65</td> <td>41-46</td> </tr> <tr> <td>Saturday, April 20</td> <td>56-66</td> <td>35-40</td> </tr> <tr> <td>Sunday, April 21</td> <td>52-57</td> <td>31-36</td> </tr> <tr> <td>Monday, April 22</td> <td>50-57</td> <td>32-37</td> </tr> </tbody> </table> <p style="text-align: center;">Precipitation Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Type</th> <th>Liquid Amounts</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>Rain and Snow</td> <td>0"-0.50"</td> <td>Mainly southern RRV</td> </tr> <tr> <td>Thursday, April 18</td> <td>Showers/Thunder</td> <td>0"-0.10"</td> <td>Eastern ND/NW MN</td> </tr> <tr> <td>Friday, April 19</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Saturday, April 20</td> <td>Showers</td> <td>0"-0.20"</td> <td>Along/north Hwy 2</td> </tr> <tr> <td>Sunday, April 21</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Monday, April 22</td> <td>None</td> <td>0"</td> <td></td> </tr> </tbody> </table> <p>Click for a description of this product Click to evaluate this product</p>	Day of the Week	Highs	Lows (Overnight)	Wednesday, April 17	48-51	35-38	Thursday, April 18	52-56	31-34	Friday, April 19	59-65	41-46	Saturday, April 20	56-66	35-40	Sunday, April 21	52-57	31-36	Monday, April 22	50-57	32-37	Day of the Week	Type	Liquid Amounts	Location	Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV	Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN	Friday, April 19	None	0"		Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2	Sunday, April 21	None	0"		Monday, April 22	None	0"		X				
Day of the Week	Highs	Lows (Overnight)																																																				
Wednesday, April 17	48-51	35-38																																																				
Thursday, April 18	52-56	31-34																																																				
Friday, April 19	59-65	41-46																																																				
Saturday, April 20	56-66	35-40																																																				
Sunday, April 21	52-57	31-36																																																				
Monday, April 22	50-57	32-37																																																				
Day of the Week	Type	Liquid Amounts	Location																																																			
Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV																																																			
Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN																																																			
Friday, April 19	None	0"																																																				
Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2																																																			
Sunday, April 21	None	0"																																																				
Monday, April 22	None	0"																																																				
<p>Situation report – 24 hour precipitation</p>  <p>National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p style="background-color: yellow; text-align: center;">Moderate-Major Flooding Continues</p> <p>Precipitation over the last 24 hours in the River Forecasts (7 am Tue to 7 am Wed)</p>  <p>24 hour forecast precipitation in the River Forecasts (7 am Wed to 7 am Thu)</p>  <p>Click for a description of this product Click to evaluate this product</p>	X																																																					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation report – Message of the Day</p>  <p>National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Message of the Day: Widespread river flooding and localized overland flooding continues. Red River continues to rise near and north of Drayton while southern portions of the valley are seeing re-rises due to snowmelt and ongoing rainfall.</p>   <p>Water on Demers Ave near the Sorlie Bridge in East Grand Forks MN on 4/12/19. Photo courtesy of Carl Jones.</p> <p>Quick facts you should know about flooding:</p> <ul style="list-style-type: none"> Flooding can be caused by heavy rain, rapid snow melt, ice jamming, levee overtopping, dam failure, or from wastewater systems. It only takes 6 inches of fast-moving water to knock you off your feet. A car can be moved in as little as 2 feet of water. 50% of all U.S. natural disasters declared by the President involve flooding. <p>Preparedness:</p> <p>Know your risk: Are you in a flood-prone area? Know your zone. www.fema.gov/flood-zones</p> <ul style="list-style-type: none"> You must purchase separate flood insurance for your home. There is a 30 day wait period between when you buy a flood insurance policy and when it goes into effect. Plan ahead! A Flood Watch is issued when conditions are favorable for flooding. Time to prepare! A Flood Warning is issued when flooding is imminent or occurring. Time to act! <p>Never drive into flood waters! Turn around, don't drown!</p> <p>Find out more information on our web page: www.weather.gov/fat/</p> <p>Follow us on Facebook and Twitter for more up to date information:</p> <p> @NWSGrandForks  @NWSGrandForks</p> <p> Building a Weather-Ready Nation</p> <p>Click for a description of this product Click to evaluate this product</p>	X				

7. What changes might you recommend for any of the products shown?

Keep text char $\frac{1}{2}$ concise and not wordy.
 Limit info to the more specific community.

8. Which media would you use to find NWS information about the risk of flooding near you? Please circle all that apply:

Facebook
 Twitter
 Internet
 Other: _____

9. Which digital platform are you most likely to use to access NWS resources? Circle one.

Smartphone Tablet Laptop Desktop Other: _____

10. Was anything in the session confusing? Yes No

If Yes, please explain:

Nothing

11. What improvements could be made in the format or content of this session?

Nothing

12. Additional comments:

Great!

Thank you for participating!

Survey Questions - Post-Focus Group Session Survey

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0690-0030. Without this approval, we could not conduct this post-focus group survey collection. Public reporting for this information collection is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Nurture Nature Center at: 518 Northampton Street, Easton, PA 18042, Attn: Rachel Hogan Carr, Executive Director, rhogan@nurturenature.org.

1. Please rate your agreement with the following statements about the forum.

Please check ONE box for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The information was clearly presented.	✓				
I felt comfortable voicing my opinion.	✓				
I know more about the National Weather Service (NWS) resources.	✓				
I feel I could use NWS resources to judge my risk in an extreme weather event.	✓				

2. What are the biggest barriers you face in using NWS flood forecast and warning products? Some examples to consider are lack of computer or phone, lack of internet access, language barriers, NWS products too difficult to understand, or other factors.

User friendly apps for specific areas

3. Our goal today was to gather feedback to improve NWS flood forecast and warning tools. Beyond the questions asked today, what else would be important to know about how you gather/would use NWS information about extreme weather risks and your intended actions?

A cell phone app w/ updated info

4. After attending today's session, how likely are you to:

Please check ONE box for each statement.

	Very Likely	Somewhat Likely	Neither likely nor unlikely	Somewhat Unlikely	Unlikely
Create or revise plans to deal with extreme weather events using NWS products.	✓				
Share what I learned about NWS products today with others.	✓				
Seek NWS information about extreme weather risks.	✓				
Use NWS products and information in your decision-making	✓				

5. Do you prefer text-based or graphical/visual NWS products in trying to understand your level of risk from flooding? Circle one.

Text

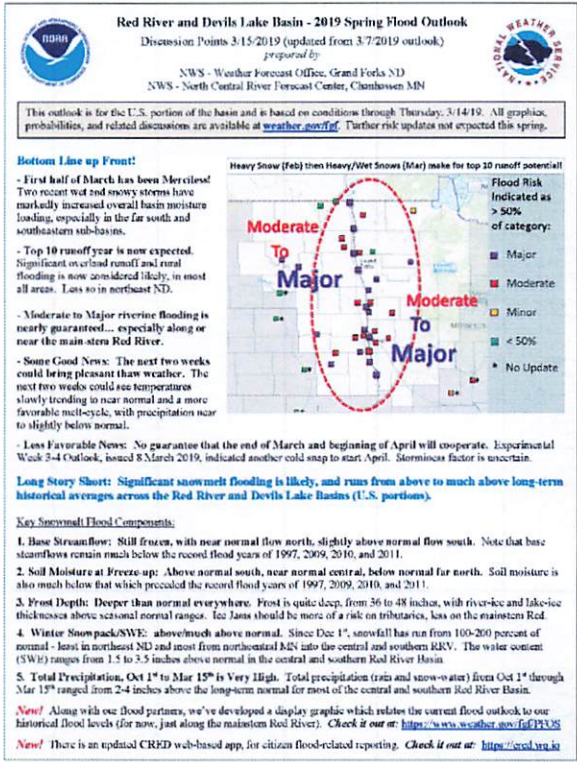

Graphics

Combined text and graphics

Please explain.

Easier to spot your area w/ graphics

6. Please rate the weather products discussed today based on their usefulness to you in assessing your flood situation.

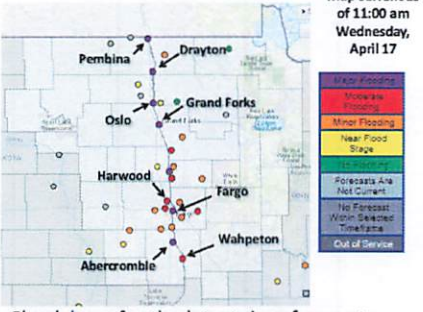
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Spring Flood Outlook</p>  <p>Red River and Devils Lake Basin - 2019 Spring Flood Outlook Discussion Points 3/15/2019 (updated from 3/7/2019 outlook) prepared by: NWS - Weather Forecast Office, Grand Forks ND NWS - North Central River Forecast Center, Chambliss MN</p> <p>This outlook is for the U.S. portion of the basin and is based on conditions through Thursday, 3/14/19. All graphics, probabilities, and related discussions are available at weather.gov/flo. Further risk updates not expected this spring.</p> <p>Bottom Line up Front!</p> <ul style="list-style-type: none"> - First half of March has been Merciful! Two recent wet and snowy storms have markedly increased overall basin moisture loading, especially in the far south and southeastern sub-basins. - Top 10 runoff year is now expected. Significant on-road runoff and rural flooding is now considered likely, in most all areas. Less so in northeast ND. - Moderate to Major riverine flooding is nearly guaranteed... especially along or near the main-stem Red River. - Some Good News: The next two weeks could bring pleasant thaw weather. The next two weeks could see temperatures slowly trending to near normal and a more favorable melt-cycle, with precipitation near to slightly below normal. - Less Favorable News: No guarantee that the end of March and beginning of April will cooperate. Experimental Week 3-4 Outlook, issued 8 March 2019, indicated another cold snap to start April. Storminess factor is uncertain. <p>Long Story Short: Significant snowmelt flooding is likely, and runs from above to much above long-term historical averages across the Red River and Devils Lake Basins (U.S. portions).</p> <p>Key Seasonal Flood Components:</p> <ol style="list-style-type: none"> 1. Base Streamflow: Still frozen, with near normal flow north, slightly above normal flow south. Note that base streamflows remain much below the record flood years of 1997, 2009, 2010, and 2011. 2. Soil Moisture at Freeze-up: Above normal south, near normal central, below normal for north. Soil moisture is also much below that which preceded the record flood years of 1997, 2009, 2010, and 2011. 3. Frost Depth: Deeper than normal everywhere. Frost is quite deep, from 36 to 48 inches, with river-ice and lake-ice thicknesses above seasonal normal ranges. Ice jams should be more of a risk on tributaries, less on the mainstem Red. 4. Winter Snowpack/SWE: above/much above normal. Since Dec 1st, snowfall has run from 100-200 percent of normal - least in northeast ND and most from northcentral MN into the central and southern RRV. The water content (SWC) ranges from 1.5 to 3.5 inches above normal in the central and southern Red River Basin. 5. Total Precipitation, Oct 1st to Mar 15th is Very High. Total precipitation (rain and snow-water) from Oct 1st through Mar 15th ranged from 2-4 inches above the long-term normal for most of the central and southern Red River Basin. <p>News! Along with our flood partners, we've developed a display graphic which relates the current flood outlook to our historical flood levels (for now, just along the mainstem Red River). Check it out at: https://www.weather.gov/flo/FRVUS</p> <p>News! There is an updated CRED web-based app, for citizen flood-related reporting. Check it out at: https://cred.nga.io</p>		✓			
<p>Snow/rain Forecasts</p>  <p>March 13-14: "Crippling" Blizzard Heavy wet snow combined with very strong winds to "shut down" the region. Heavy rain some freezing rain in the southeast. Bomb cyclone, impacts across Plains.</p>		✓			

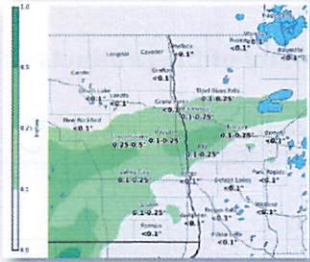
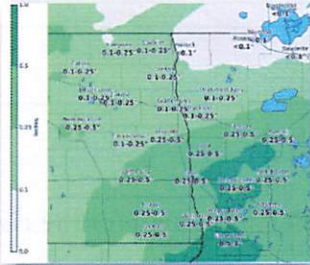
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																																																																																																																																																																																																																																																								
<p>Long range probabilistic outlook</p> <p>DEVILS LAKE & STUMP LAKE... (last updated) Valid March 1, 2019 - September 19, 2019</p> <p>LOCATION: 998 999 998 998 998 998 998 998</p> <p>WATER YEAR: 1440.1 1440.2 1440.3 1440.4 1440.5 1440.6 1440.7 1440.8</p> <p>EAST STUMP LAKE: 1440.1 1440.2 1440.3 1440.4 1440.5 1440.6 1440.7 1440.8</p> <p>The current water level of Devils Lake and Stump Lake are 4140.2 ft. MSL.</p> <p>Color code: Below Minor Moderate Major Flood of Record</p> <p>RED RIVER AND TRIBUTARIES... Long Range Probabilistic Outlook Valid March 19, 2019 - June 16, 2019</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>998</th> <th>999</th> <th>755</th> <th>563</th> <th>548</th> <th>100</th> <th>658</th> </tr> </thead> <tbody> <tr> <td>WATERFURY</td> <td>13.0</td> <td>14.1</td> <td>14.8</td> <td>15.7</td> <td>17.0</td> <td>18.2</td> <td>19.0</td> </tr> <tr> <td>TRICKLE</td> <td>32.1</td> <td>32.8</td> <td>33.9</td> <td>35.1</td> <td>36.1</td> <td>37.6</td> <td>38.6</td> </tr> <tr> <td>WATER</td> <td>33.0</td> <td>34.9</td> <td>36.5</td> <td>37.9</td> <td>38.9</td> <td>40.5</td> <td>41.4</td> </tr> <tr> <td>WATER</td> <td>36.0</td> <td>36.8</td> <td>39.0</td> <td>38.5</td> <td>40.0</td> <td>40.5</td> <td>41.2</td> </tr> <tr> <td>CAMP FORGE</td> <td>45.0</td> <td>47.2</td> <td>49.0</td> <td>50.6</td> <td>52.7</td> <td>54.6</td> <td>56.7</td> </tr> <tr> <td>WATER</td> <td>37.2</td> <td>37.5</td> <td>37.8</td> <td>37.9</td> <td>38.0</td> <td>38.1</td> <td>38.1</td> </tr> <tr> <td>WATER</td> <td>41.8</td> <td>42.4</td> <td>43.0</td> <td>43.7</td> <td>44.8</td> <td>45.3</td> <td>46.0</td> </tr> <tr> <td>WATER</td> <td>51.0</td> <td>51.7</td> <td>52.2</td> <td>53.0</td> <td>53.7</td> <td>54.5</td> <td>54.7</td> </tr> </tbody> </table> <p>Minnesota Tributaries:</p> <table border="1"> <tbody> <tr> <td>JACKSON</td> <td>24.0</td> <td>25.0</td> <td>25.8</td> <td>27.2</td> <td>28.6</td> <td>29.9</td> <td>21.7</td> </tr> <tr> <td>WATER</td> <td>9.5</td> <td>9.8</td> <td>10.0</td> <td>10.4</td> <td>11.2</td> <td>11.9</td> <td>12.5</td> </tr> <tr> <td>WATER</td> <td>21.2</td> <td>21.9</td> <td>22.7</td> <td>23.9</td> <td>25.1</td> <td>26.7</td> <td>28.1</td> </tr> <tr> <td>WATER</td> <td>10.9</td> <td>12.0</td> <td>12.8</td> <td>13.9</td> <td>15.6</td> <td>17.1</td> <td>18.0</td> </tr> <tr> <td>WATER</td> <td>31.6</td> <td>32.0</td> <td>32.6</td> <td>33.3</td> <td>34.0</td> <td>35.0</td> <td>35.8</td> </tr> <tr> <td>WATER</td> <td>17.0</td> <td>18.0</td> <td>20.3</td> <td>22.0</td> <td>23.9</td> <td>24.7</td> <td>25.7</td> </tr> <tr> <td>WATER</td> <td>26.6</td> <td>27.9</td> <td>29.4</td> <td>31.2</td> <td>34.4</td> <td>37.0</td> <td>39.1</td> </tr> <tr> <td>WATER</td> <td>12.4</td> <td>12.7</td> <td>13.1</td> <td>13.3</td> <td>13.5</td> <td>13.6</td> <td>13.7</td> </tr> <tr> <td>WATER</td> <td>31.6</td> <td>32.5</td> <td>34.3</td> <td>36.9</td> <td>40.5</td> <td>39.4</td> <td>32.9</td> </tr> <tr> <td>WATER</td> <td>65.0</td> <td>65.7</td> <td>65.7</td> <td>65.8</td> <td>66.1</td> <td>66.0</td> <td>66.1</td> </tr> <tr> <td>WATER</td> <td>104.5</td> <td>105.4</td> <td>108.3</td> <td>109.0</td> <td>109.1</td> <td>110.3</td> <td>110.9</td> </tr> <tr> <td>WATER</td> <td>807.4</td> <td>807.7</td> <td>808.4</td> <td>809.5</td> <td>809.9</td> <td>812.5</td> <td>812.0</td> </tr> <tr> <td>WATER</td> <td>14.1</td> <td>14.6</td> <td>15.4</td> <td>16.4</td> <td>17.7</td> <td>18.9</td> <td>19.4</td> </tr> </tbody> </table> <p>North Dakota Tributaries:</p> <table border="1"> <tbody> <tr> <td>WATER</td> <td>20.0</td> <td>21.9</td> <td>23.4</td> <td>24.8</td> <td>26.6</td> <td>26.9</td> <td>27.5</td> </tr> <tr> <td>WATER</td> <td>13.2</td> <td>15.2</td> <td>16.6</td> <td>18.0</td> <td>19.8</td> <td>21.7</td> <td>22.7</td> </tr> <tr> <td>WATER</td> <td>15.4</td> <td>16.4</td> <td>18.3</td> <td>20.5</td> <td>22.4</td> <td>25.0</td> <td>28.2</td> </tr> <tr> <td>WATER</td> <td>20.2</td> <td>20.5</td> <td>21.1</td> <td>21.2</td> <td>21.2</td> <td>21.2</td> <td>21.2</td> </tr> <tr> <td>WATER</td> <td>21.2</td> <td>21.3</td> <td>21.3</td> <td>21.3</td> <td>21.3</td> <td>21.3</td> <td>21.3</td> </tr> <tr> <td>WATER</td> <td>91.0</td> <td>91.9</td> <td>92.1</td> <td>92.1</td> <td>92.2</td> <td>92.3</td> <td>92.4</td> </tr> <tr> <td>WATER</td> <td>11.8</td> <td>12.3</td> <td>12.8</td> <td>13.3</td> <td>13.6</td> <td>14.4</td> <td>15.0</td> </tr> <tr> <td>WATER</td> <td>22.0</td> <td>22.9</td> <td>22.5</td> <td>22.6</td> <td>23.2</td> <td>24.0</td> <td>24.1</td> </tr> <tr> <td>WATER</td> <td>5.1</td> <td>5.4</td> <td>5.1</td> <td>5.3</td> <td>5.4</td> <td>5.5</td> <td>5.9</td> </tr> <tr> <td>WATER</td> <td>7.3</td> <td>7.5</td> <td>8.0</td> <td>8.5</td> <td>9.4</td> <td>9.9</td> <td>10.2</td> </tr> <tr> <td>WATER</td> <td>6.7</td> <td>7.2</td> <td>7.1</td> <td>7.4</td> <td>7.1</td> <td>7.9</td> <td>7.9</td> </tr> <tr> <td>WATER</td> <td>5.5</td> <td>5.2</td> <td>5.5</td> <td>5.4</td> <td>5.7</td> <td>5.9</td> <td>5.9</td> </tr> <tr> <td>WATER</td> <td>6.3</td> <td>6.4</td> <td>6.7</td> <td>6.6</td> <td>6.6</td> <td>6.5</td> <td>6.5</td> </tr> </tbody> </table> <p>Notes:</p> <ol style="list-style-type: none"> Devils Lake Basin Runoff Risk has not changed much since February. A somewhat above normal rise is expected, from 1 to 2 ft. No update since 7 Mar 2019. Note: Devils Lake is currently about 1.5 feet lower than this time last year. Red River Basin Runoff Risk has jumped markedly. All Red River main-stem points will see significantly higher flows, - due to significant snow/SWE loads from 9 Mar and 14 Mar storms, over damp and deep frozen antecedent conditions, especially in the far southern Red River Basin, south of Fargo; - coupled with much increased runoff potential from the MN tributaries, and Red Lake River Basin. Snowpack/SWE and runoff potential has increased in most all MN tributaries. Central and South tris have seen the highest increase in snow and SWE this past week, including the Red Lake River. Roseau River Basin now has a slight increase to just above normal for runoff risk. ND Wild Rice has a quite High Runoff Risk, with much above normal snowpack. Mid to Lower Sheyenne has gained appreciably in snow and SWE. High Red River levels lead to sig. backwater at Harwood. Some snow/SWE increases on Maple and Rush Rivers as well. Slight increase on Park River, else northeast ND saw least overall gains in SWE. 	LOCATION	998	999	755	563	548	100	658	WATERFURY	13.0	14.1	14.8	15.7	17.0	18.2	19.0	TRICKLE	32.1	32.8	33.9	35.1	36.1	37.6	38.6	WATER	33.0	34.9	36.5	37.9	38.9	40.5	41.4	WATER	36.0	36.8	39.0	38.5	40.0	40.5	41.2	CAMP FORGE	45.0	47.2	49.0	50.6	52.7	54.6	56.7	WATER	37.2	37.5	37.8	37.9	38.0	38.1	38.1	WATER	41.8	42.4	43.0	43.7	44.8	45.3	46.0	WATER	51.0	51.7	52.2	53.0	53.7	54.5	54.7	JACKSON	24.0	25.0	25.8	27.2	28.6	29.9	21.7	WATER	9.5	9.8	10.0	10.4	11.2	11.9	12.5	WATER	21.2	21.9	22.7	23.9	25.1	26.7	28.1	WATER	10.9	12.0	12.8	13.9	15.6	17.1	18.0	WATER	31.6	32.0	32.6	33.3	34.0	35.0	35.8	WATER	17.0	18.0	20.3	22.0	23.9	24.7	25.7	WATER	26.6	27.9	29.4	31.2	34.4	37.0	39.1	WATER	12.4	12.7	13.1	13.3	13.5	13.6	13.7	WATER	31.6	32.5	34.3	36.9	40.5	39.4	32.9	WATER	65.0	65.7	65.7	65.8	66.1	66.0	66.1	WATER	104.5	105.4	108.3	109.0	109.1	110.3	110.9	WATER	807.4	807.7	808.4	809.5	809.9	812.5	812.0	WATER	14.1	14.6	15.4	16.4	17.7	18.9	19.4	WATER	20.0	21.9	23.4	24.8	26.6	26.9	27.5	WATER	13.2	15.2	16.6	18.0	19.8	21.7	22.7	WATER	15.4	16.4	18.3	20.5	22.4	25.0	28.2	WATER	20.2	20.5	21.1	21.2	21.2	21.2	21.2	WATER	21.2	21.3	21.3	21.3	21.3	21.3	21.3	WATER	91.0	91.9	92.1	92.1	92.2	92.3	92.4	WATER	11.8	12.3	12.8	13.3	13.6	14.4	15.0	WATER	22.0	22.9	22.5	22.6	23.2	24.0	24.1	WATER	5.1	5.4	5.1	5.3	5.4	5.5	5.9	WATER	7.3	7.5	8.0	8.5	9.4	9.9	10.2	WATER	6.7	7.2	7.1	7.4	7.1	7.9	7.9	WATER	5.5	5.2	5.5	5.4	5.7	5.9	5.9	WATER	6.3	6.4	6.7	6.6	6.6	6.5	6.5				✓	
LOCATION	998	999	755	563	548	100	658																																																																																																																																																																																																																																																																																						
WATERFURY	13.0	14.1	14.8	15.7	17.0	18.2	19.0																																																																																																																																																																																																																																																																																						
TRICKLE	32.1	32.8	33.9	35.1	36.1	37.6	38.6																																																																																																																																																																																																																																																																																						
WATER	33.0	34.9	36.5	37.9	38.9	40.5	41.4																																																																																																																																																																																																																																																																																						
WATER	36.0	36.8	39.0	38.5	40.0	40.5	41.2																																																																																																																																																																																																																																																																																						
CAMP FORGE	45.0	47.2	49.0	50.6	52.7	54.6	56.7																																																																																																																																																																																																																																																																																						
WATER	37.2	37.5	37.8	37.9	38.0	38.1	38.1																																																																																																																																																																																																																																																																																						
WATER	41.8	42.4	43.0	43.7	44.8	45.3	46.0																																																																																																																																																																																																																																																																																						
WATER	51.0	51.7	52.2	53.0	53.7	54.5	54.7																																																																																																																																																																																																																																																																																						
JACKSON	24.0	25.0	25.8	27.2	28.6	29.9	21.7																																																																																																																																																																																																																																																																																						
WATER	9.5	9.8	10.0	10.4	11.2	11.9	12.5																																																																																																																																																																																																																																																																																						
WATER	21.2	21.9	22.7	23.9	25.1	26.7	28.1																																																																																																																																																																																																																																																																																						
WATER	10.9	12.0	12.8	13.9	15.6	17.1	18.0																																																																																																																																																																																																																																																																																						
WATER	31.6	32.0	32.6	33.3	34.0	35.0	35.8																																																																																																																																																																																																																																																																																						
WATER	17.0	18.0	20.3	22.0	23.9	24.7	25.7																																																																																																																																																																																																																																																																																						
WATER	26.6	27.9	29.4	31.2	34.4	37.0	39.1																																																																																																																																																																																																																																																																																						
WATER	12.4	12.7	13.1	13.3	13.5	13.6	13.7																																																																																																																																																																																																																																																																																						
WATER	31.6	32.5	34.3	36.9	40.5	39.4	32.9																																																																																																																																																																																																																																																																																						
WATER	65.0	65.7	65.7	65.8	66.1	66.0	66.1																																																																																																																																																																																																																																																																																						
WATER	104.5	105.4	108.3	109.0	109.1	110.3	110.9																																																																																																																																																																																																																																																																																						
WATER	807.4	807.7	808.4	809.5	809.9	812.5	812.0																																																																																																																																																																																																																																																																																						
WATER	14.1	14.6	15.4	16.4	17.7	18.9	19.4																																																																																																																																																																																																																																																																																						
WATER	20.0	21.9	23.4	24.8	26.6	26.9	27.5																																																																																																																																																																																																																																																																																						
WATER	13.2	15.2	16.6	18.0	19.8	21.7	22.7																																																																																																																																																																																																																																																																																						
WATER	15.4	16.4	18.3	20.5	22.4	25.0	28.2																																																																																																																																																																																																																																																																																						
WATER	20.2	20.5	21.1	21.2	21.2	21.2	21.2																																																																																																																																																																																																																																																																																						
WATER	21.2	21.3	21.3	21.3	21.3	21.3	21.3																																																																																																																																																																																																																																																																																						
WATER	91.0	91.9	92.1	92.1	92.2	92.3	92.4																																																																																																																																																																																																																																																																																						
WATER	11.8	12.3	12.8	13.3	13.6	14.4	15.0																																																																																																																																																																																																																																																																																						
WATER	22.0	22.9	22.5	22.6	23.2	24.0	24.1																																																																																																																																																																																																																																																																																						
WATER	5.1	5.4	5.1	5.3	5.4	5.5	5.9																																																																																																																																																																																																																																																																																						
WATER	7.3	7.5	8.0	8.5	9.4	9.9	10.2																																																																																																																																																																																																																																																																																						
WATER	6.7	7.2	7.1	7.4	7.1	7.9	7.9																																																																																																																																																																																																																																																																																						
WATER	5.5	5.2	5.5	5.4	5.7	5.9	5.9																																																																																																																																																																																																																																																																																						
WATER	6.3	6.4	6.7	6.6	6.6	6.5	6.5																																																																																																																																																																																																																																																																																						
<p>Flood risk</p> <p>2019 Spring Flood Outlook Above Normal Flood Risk Continues</p> <p>Watershed Forecast Office Grand Forks, ND Issued March 19, 2019 11:43AM CDT</p> <p>Significant Snowmelt Flooding Expected</p> <ul style="list-style-type: none"> The threat for significant snowmelt flooding continues to be above normal throughout the Red River Basin Major flooding is expected along the mainstem Red River with moderate to major flooding on the tributaries Future temperatures and precipitation (snow + rain) will have a big impact on flood potential The later the snowmelt gets, the more the risk for rapid and/or rainfall enhanced runoff increases Stay tuned for updated information as we get closer to the spring melt 				✓																																																																																																																																																																																																																																																																																									





	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Percent chance of exceedance</p> <p>2019 Spring Flood Outlook for Red River at Drayton Valid 03-18-2019 through 06-16-2019</p> <p>% Chance of reaching or exceeding this level</p>			✓		
<p>Hydrologic Outlook/Thaw Updates</p> <p>Hydrologic Outlook/Thaw Updates</p> <ul style="list-style-type: none"> Monday, March 18th <ul style="list-style-type: none"> Favorable melt conditions to persist Daytime temperatures warming into the 40s and 50s will help ripen the snowpack, but low temperatures dipping back below freezing will keep water from entering the river system No major weather systems expected for the next week Thursday, March 21st <ul style="list-style-type: none"> Favorable melt conditions to persist Temperatures above freezing during the day and below freezing at night will start to create some ponding and water moving into local drainage Full blown river flooding and extensive overland flooding not expected to begin through at least early next week March 15th outlook remains valid as recent temperature and precipitation pattern has been accounted for 		✓			

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Flood Warning</p> <p>376 WGUS43 KFGF 271441 FLWFGF BULLETIN - IMMEDIATE BROADCAST REQUESTED Flood Warning National Weather Service Eastern North Dakota/Grand Forks ND 941 AM CDT Wed Mar 27 2019</p> <p>...The National Weather Service in Grand Forks, ND has issued a flood warning (new) for these river locations in Minnesota...North Dakota...</p> <p>new flooding is forecast to occur at... * Wahpeton...on the Red River...in Wilkin and Richland Counties.</p> <p>. A combination of reservoir outflows and localized snowmelt is causing the Wahpeton stage to slowly rise.</p> <p>Forecast temperatures show continued above freezing temperatures over the next 24 hours, followed by cooler temperatures March 29 through 31 More snowmelt is expected today.</p> <p>Below freezing forecast temperatures during March 30-31 should temporarily shut down the melt.</p> <p>A more typical springtime temperature regime, with daytime highs above freezing, and nighttime lows below freezing, is currently forecast for the first week of April. This would result in an ideal slow snowmelt pattern during that time.</p> <p>The current stage is affected by 1 to 2 feet of ice.</p> <p>*** A follow-up flood statement with more detailed flooding information will be issued shortly. ***</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-271541- /O.NEW.KFGF.FL.W.0001.190329T0600Z-190402T1200Z/ /WHNN8.1.SM.190329T0600Z.190330T1200Z.190401T0600Z.NO/ 941 AM CDT Wed Mar 27 2019</p> <p>The National Weather Service in Grand Forks, ND has issued a new Flood Warning for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River * from late Thursday night to Tuesday morning. * At 8:30 AM Wednesday the stage was 10.2 feet. * Minor Flood Stage is 11.0 feet. * For the next 7 days..Minor flooding is forecast. * Forecast...rise above Flood Stage by early Friday morning and continue to rise to near 11.5 feet by Saturday mid-morning. The river will fall below Flood Stage by early Monday morning. <p>&&</p> <p>LAT...LON 4658 9684 4650 9663 4603 9641 4602 9672</p> <p>\$\$</p> <p>HydroTeam FGF</p>		✓			

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																	
<p>Flood statement</p> <p>713 WGUS83 KFGF 171652 FLSFGF Flood Statement National Weather Service Eastern North Dakota/Grand Forks ND 1152 AM CDT Wed Apr 17 2019</p> <p>...The flood warning is now cancelled for these river locations in Minnesota...</p> <ul style="list-style-type: none"> * Alvarado...on the Snake River...in Marshall County <p>...The flood warning has been extended for these river locations in North Dakota...Minnesota...</p> <ul style="list-style-type: none"> * Hickson...on the Red River...in Cass County * Sabin...on the South Branch Buffalo River...in Clay County * Hawley...on the Buffalo River...in Clay County * Enderlin...on the Maple River...in Cass and Ransom Counties <p>...The flood warning continues for these river locations in Minnesota...North Dakota...</p> <ul style="list-style-type: none"> * Wahpeton...on the Red River ...in Wilkin and Richland Counties * Fargo...on the Red River ...in Clay and Cass Counties * Halstad...on the Red River ...in Norman and Traill Counties * East Grand Forks...on the Red River ...in Polk and Grand Forks Counties * Oslo...on the Red River ...in Marshall...Polk...Grand Forks and Walsh Counties * Drayton...on the Red River ...in Kittson...Marshall...Pembina and Walsh Counties * Pembina...on the Red River ...in Kittson and Pembina Counties * Dilworth...on the Buffalo River ...in Clay County * Twin Valley...on the Wild Rice River (MN) ...in Norman County * Hendrum...on the Wild Rice River (MN) ...in Norman County * Shelly...on the Marsh River ...in Norman County * Climax...on the Sandhill River ...in Polk County * Crookston...on the Red Lake River ...in Polk County * Hallock...on the Two Rivers River ...in Kittson County * Abercrombie...on the Wild Rice River (ND) ...in Richland County * Kindred...on the Sheyenne River ...in Cass and Richland Counties * West Fargo Diversion...on the Sheyenne River ...in Cass County * Harwood...on the Sheyenne River ...in Cass County * Mapleton...on the Maple River ...in Cass County <p>.This forecast is for a 7-day period..the highest stage indicated may not reflect the crest for this event.</p> <p>Forecasts are updated daily and stage values will change as new weather and river information is used.</p> <p>River forecasts use 24 hours of forecast precipitation. However, depending on the situation, they may include precipitation expected through the next 72 hours.</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-181653- /O.CON.KFGF.FL.W.0001.000000T0000Z-000000T0000Z/ /WHNNS.2.SM.190328T0937Z.190401T1115Z.000000T0000Z.NO/ 1152 AM CDT Wed Apr 17 2019</p> <p>The Flood Warning continues for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River. * until further notice...or until the warning is cancelled. * At 10:30 AM Wednesday the stage was 12.9 feet. * Minor flooding is occurring and during the next 7 days...Moderate flooding is forecast. * Moderate Flood Stage is 13.0 feet. * The river is forecast to crest at 14.5 (give or take one foot) on Sunday morning. * Reservoir outflows upstream are being lessened by the USACE. * Impact Statement(s) - At 15.0 feet, MAJOR FLOOD. Wahpeton storm sewer outlets and Main Street closed. <p>&&</p> <p>Daily 7am CDT/6am CST forecast stage in feet:</p> <table border="1"> <thead> <tr> <th>Date (month/day)</th> <th>Thu 04/18</th> <th>Fri 04/19</th> <th>Sat 04/20</th> <th>Sun 04/21</th> <th>Mon 04/22</th> <th>Tue 04/23</th> <th>Wed 04/24</th> </tr> </thead> <tbody> <tr> <td>...</td></tr> <tr> <td>...truncated 784 lines...</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24truncated 784 lines...									✓			
Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24															
...																						
...truncated 784 lines...																						

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation Report – Map of forecast points</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Map of Flood Forecast Points</p>  <p>Map current as of 11:00 am Wednesday, April 17</p> <p>Check here for the latest river forecasts</p> <p>Message of the Day:</p> <ul style="list-style-type: none"> Initial crest: rising river levels continue on the Red River near and north of Drayton. Secondary crest: secondary rises ongoing due to snowmelt/rainfall. Secondary crests should be lower than first for most locations (except possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks). Overland flooding continues along and near the Red River. <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>	✓				
<p>Situation Report - Impacts</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Potential Impacts:</p> <ul style="list-style-type: none"> Snow melt from last week's winter storm continues to cause secondary rises in rivers and tributaries. This snowmelt and ongoing rainfall will also serve to lengthen duration of high water. <ul style="list-style-type: none"> Secondary crest not expected to be higher than previous crest for most locations, with the exception of possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks. Several roads (including I-29) continue to be impacted due to overland and river flooding, especially near the Red River. Backwater is still affecting many locations on the tributaries while few ice impacts remain. Continue to pay attention to closures and notices from local authorities. <p>River Basins Potentially Impacted:</p> <ul style="list-style-type: none"> Initial flood crest: <ul style="list-style-type: none"> The Red River at Drayton is nearing crest while levels continue to rise at Pembina. Secondary flood crest: <ul style="list-style-type: none"> Most locations across the southern portion of the basin are beginning their secondary rise. Backwater from the main stem Red River will continue to keep water levels high, especially between Fargo/Moorhead and the international border. <p>How to Monitor River Levels and Forecasts:</p> <ul style="list-style-type: none"> NWS River Observation/Forecast Page NWS Grand Forks Flood Briefing Page <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>		✓			

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																	
<p>Situation Report – Temp and Precip Outlook</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Temperature Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Highs</th> <th>Lows (Overnight)</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>46-51</td> <td>35-38</td> </tr> <tr> <td>Thursday, April 18</td> <td>52-56</td> <td>31-34</td> </tr> <tr> <td>Friday, April 19</td> <td>59-65</td> <td>41-46</td> </tr> <tr> <td>Saturday, April 20</td> <td>56-66</td> <td>35-40</td> </tr> <tr> <td>Sunday, April 21</td> <td>52-57</td> <td>31-36</td> </tr> <tr> <td>Monday, April 22</td> <td>50-57</td> <td>32-37</td> </tr> </tbody> </table> <p>Precipitation Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Type</th> <th>Liquid Amounts</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>Rain and Snow</td> <td>0"-0.50"</td> <td>Mainly southern RRV</td> </tr> <tr> <td>Thursday, April 18</td> <td>Showers/Thunder</td> <td>0"-0.10"</td> <td>Eastern ND/NW MN</td> </tr> <tr> <td>Friday, April 19</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Saturday, April 20</td> <td>Showers</td> <td>0"-0.20"</td> <td>Along/north Hwy 2</td> </tr> <tr> <td>Sunday, April 21</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Monday, April 22</td> <td>None</td> <td>0"</td> <td></td> </tr> </tbody> </table> <p>Click for a description of this product Click to evaluate this product</p>	Day of the Week	Highs	Lows (Overnight)	Wednesday, April 17	46-51	35-38	Thursday, April 18	52-56	31-34	Friday, April 19	59-65	41-46	Saturday, April 20	56-66	35-40	Sunday, April 21	52-57	31-36	Monday, April 22	50-57	32-37	Day of the Week	Type	Liquid Amounts	Location	Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV	Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN	Friday, April 19	None	0"		Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2	Sunday, April 21	None	0"		Monday, April 22	None	0"			✓			
Day of the Week	Highs	Lows (Overnight)																																																				
Wednesday, April 17	46-51	35-38																																																				
Thursday, April 18	52-56	31-34																																																				
Friday, April 19	59-65	41-46																																																				
Saturday, April 20	56-66	35-40																																																				
Sunday, April 21	52-57	31-36																																																				
Monday, April 22	50-57	32-37																																																				
Day of the Week	Type	Liquid Amounts	Location																																																			
Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV																																																			
Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN																																																			
Friday, April 19	None	0"																																																				
Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2																																																			
Sunday, April 21	None	0"																																																				
Monday, April 22	None	0"																																																				
<p>Situation report – 24 hour precipitation</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Precipitation over the last 24 hours in the River Forecasts (7 am Tue to 7 am Wed)</p>  <p>24 hour forecast precipitation in the River Forecasts (7 am Wed to 7 am Thu)</p>  <p>Click for a description of this product Click to evaluate this product</p>		✓																																																				

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation report – Message of the Day</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Message of the Day: Widespread river flooding and localized overland flooding continues. Red River continues to rise near and north of Drayton while southern portions of the valley are seeing re-rises due to snowmelt and ongoing rainfall.</p>   <p>Water on Demers Ave near the Sorlie Bridge in East Grand Forks MN on 4/12/19. Photo courtesy of Carl Jones.</p> <p>Quick facts you should know about flooding:</p> <ul style="list-style-type: none"> Flooding can be caused by heavy rain, rapid snow melt, ice jamming, levee overtopping, dam failure, or from wastewater systems. It only takes 6 inches of fast-moving water to knock you off your feet. A car can be moved in as little as 2 feet of water. 90% of all U.S. natural disasters declared by the President involve flooding. <p>Preparedness:</p> <p>Know your risk: Are you in a flood-prone area? Know your zone: www.fema.gov/flood-zones</p> <ul style="list-style-type: none"> You must purchase separate flood insurance for your home. There is a 30 day wait period between when you buy a flood insurance policy and when it goes into effect. Plan ahead! A Flood Watch is issued when conditions are favorable for flooding. Time to prepare! A Flood Warning is issued when flooding is imminent or occurring. Time to act! <p>Never drive into flood waters! Turn around, don't drown!</p> <p>Find out more information on our web page: www.weather.gov/gf/</p> <p>Follow us on Facebook and Twitter for more up to date information:  @NWSGrandForks  @NWSGrandForks</p> <p>Building a Weather-Ready Nation</p> <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>	✓				

7. What changes might you recommend for any of the products shown?

Apps to access these on your phone or laptop

8. Which media would you use to find NWS information about the risk of flooding near you? Please circle all that apply:

Facebook Twitter Internet Other: website

9. Which digital platform are you most likely to use to access NWS resources? Circle one.

Smartphone

Tablet

Laptop

Desktop

Other: _____

10. Was anything in the session confusing? Yes No

If Yes, please explain:

11. What improvements could be made in the format or content of this session?

It was very informal and comfortable — change nothing
The presenters were personable + great

12. Additional comments:

Enjoyed them.

Thank you for participating!

Survey Questions - Post-Focus Group Session Survey

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0690-0030. Without this approval, we could not conduct this post-focus group survey collection. Public reporting for this information collection is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Nurture Nature Center at: 518 Northampton Street, Easton, PA 18042, Attn: Rachel Hogan Carr, Executive Director, rhogan@nuturenature.org.

1. Please rate your agreement with the following statements about the forum.

Please check ONE box for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The information was clearly presented.	✓				
I felt comfortable voicing my opinion.	✓				
I know more about the National Weather Service (NWS) resources.	✓				
I feel I could use NWS resources to judge my risk in an extreme weather event.	.	✓			

2. What are the biggest barriers you face in using NWS flood forecast and warning products? Some examples to consider are lack of computer or phone, lack of internet access, language barriers, NWS products too difficult to understand, or other factors.

_____ *lack of marketing on NWS part* _____

3. Our goal today was to gather feedback to improve NWS flood forecast and warning tools. Beyond the questions asked today, what else would be important to know about how you gather/would use NWS information about extreme weather risks and your intended actions?

I use water table information over the years the impact
and snow melt water ratio

4. After attending today's session, how likely are you to:

Please check ONE box for each statement.

	Very Likely	Somewhat Likely	Neither likely nor unlikely	Somewhat Unlikely	Unlikely
Create or revise plans to deal with extreme weather events using NWS products.		✓			
Share what I learned about NWS products today with others.		✓			
Seek NWS information about extreme weather risks.	✓				
Use NWS products and information in your decision-making	✓				

5. Do you prefer text-based or graphical/visual NWS products in trying to understand your level of risk from flooding? Circle one.

Text

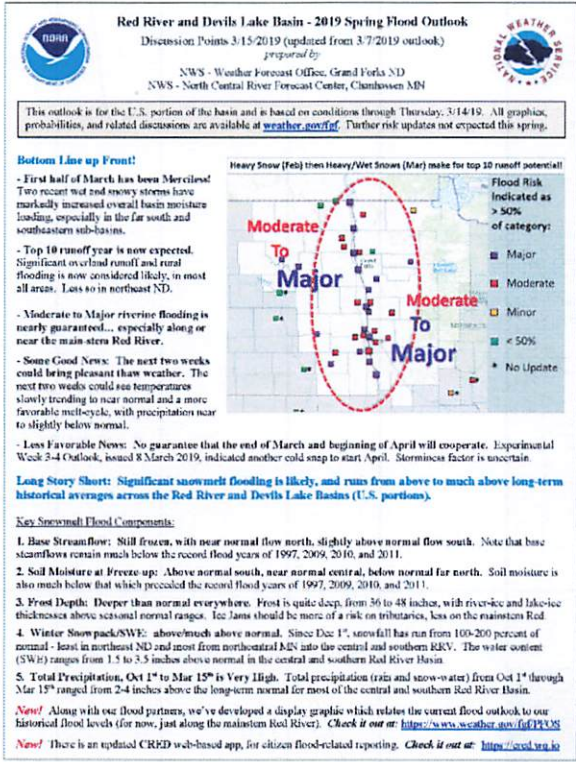

Graphics

Combined text and graphics

Please explain.

ADHD need ^{different} ~~more~~ stuff to keep attention

6. Please rate the weather products discussed today based on their usefulness to you in assessing your flood situation.

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Spring Flood Outlook</p> 			✓		
<p>Snow/rain Forecasts</p> 			✓		

Long range probabilistic outlook

DEVILS LAKE & STUMP LAKE... <small>(not updated)</small>		Long Range Probabilistic Outlook Valid March 1, 2019 - June 15, 2019						Notes
LOCATION	95%	90%	75%	50%	25%	10%	5%	
WINDY LAKE	149.1	149.2	149.3	149.4	149.5	149.6	149.7	
EAST STUMP LAKE	145.1	145.2	145.3	145.4	145.5	145.6	145.7	
The current status of Devils Lake and Stump Lake are 145.0 ft. MSL.								
Color code: Below Minor Moderate Major Flood of Record								
RED RIVER AND TRIBUTARIES...		Long Range Probabilistic Outlook Valid March 1, 2019 - June 15, 2019						Notes
LOCATION	95%	90%	75%	50%	25%	10%	5%	
WINDY LAKE	15.9	14.1	14.0	15.7	17.0	18.2	19.0	
TRINITY	20.1	22.3	23.9	25.1	26.3	27.6	28.6	
TRINITY	35.8	28.9	28.5	27.9	28.9	30.3	31.4	
BOULEVARD	36.0	38.5	39.0	38.5	40.0	40.5	41.2	
CHAMP POND	45.8	47.5	49.0	50.6	52.7	54.6	56.7	
OSLO	37.2	37.5	37.8	37.9	38.0	38.1	38.2	
OSLOTON	41.8	42.4	43.0	43.7	44.6	45.3	46.0	
OSLOTON	51.0	51.7	52.2	53.0	53.7	54.5	54.7	
Minnesota Tributaries:								
JANESVILLE River	14.6	15.0	15.8	17.2	18.6	20.9	22.7	
WINDY LAKE	9.5	9.8	10.0	10.4	11.2	11.9	13.0	
WINDY LAKE	21.2	21.9	22.7	23.9	25.1	26.7	28.2	
WINDY LAKE	19.9	22.6	23.8	23.9	25.6	27.1	28.0	
WINDY LAKE	31.6	33.0	33.6	33.3	34.0	35.0	35.6	
WINDY LAKE	17.0	18.2	20.3	22.0	23.9	24.7	25.7	
WINDY LAKE	26.6	27.9	29.4	31.2	34.4	37.0	39.1	
WINDY LAKE	12.4	12.7	13.1	13.3	13.5	13.6	13.7	
WINDY LAKE	23.6	23.5	24.3	24.9	25.5	26.4	27.9	
WINDY LAKE	45.0	46.7	48.7	48.4	48.1	48.0	48.1	
WINDY LAKE	194.5	205.6	208.1	209.0	209.1	210.3	210.9	
WINDY LAKE	807.4	807.7	808.4	809.5	809.9	812.5	812.0	
WINDY LAKE	14.1	14.8	15.6	16.4	17.7	18.9	19.4	
North Dakota Tributaries:								
WINDY LAKE	20.0	21.9	23.4	24.5	25.6	26.9	27.8	
WINDY LAKE	15.2	15.3	16.6	18.0	19.8	21.7	22.7	
WINDY LAKE	12.4	13.4	13.3	13.5	13.6	13.7	13.8	
WINDY LAKE	20.2	20.5	21.1	21.2	21.3	21.7	21.2	
WINDY LAKE	21.2	21.3	21.3	21.3	21.3	21.3	21.3	
WINDY LAKE	91.8	91.9	92.1	92.1	92.2	92.7	92.4	
WINDY LAKE	11.8	12.1	12.8	13.3	13.6	14.4	15.0	
WINDY LAKE	22.0	23.3	22.5	22.8	23.2	24.0	24.1	
WINDY LAKE	6.1	6.8	10.1	13.3	14.6	16.5	17.9	
WINDY LAKE	7.3	7.8	8.0	8.5	9.6	9.9	10.2	
WINDY LAKE	6.5	6.8	10.1	14.1	16.1	17.9	19.4	
WINDY LAKE	5.8	6.1	6.8	7.5	8.7	10.0	10.9	
WINDY LAKE	6.3	10.4	11.7	12.0	14.0	20.5	21.2	

Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful

Flood risk


2019 Spring Flood Outlook
 Above Normal Flood Risk Continues

Significant Snowmelt Flooding Expected

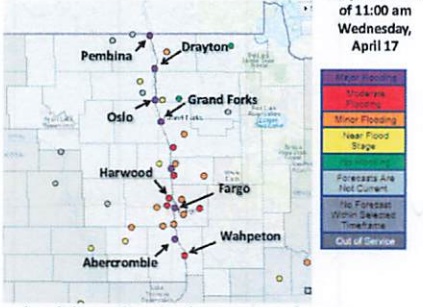
- The threat for significant snowmelt flooding continues to be above normal throughout the Red River Basin.
- Major flooding is expected along the mainstem Red River with moderate to major flooding on the tributaries.
- Future temperatures and precipitation (snow + rain) will have a big impact on flood potential.
- The later the snowmelt gets, the more the risk for rapid and/or rainfall enhanced runoff increases.
- Stay tuned for updated information as we get closer to the spring melt.



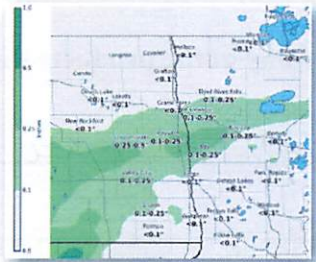
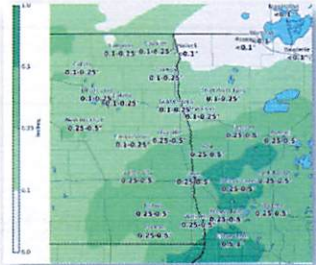
Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful






	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful												
<p>Percent chance of exceedance</p> <p>2019 Spring Flood Outlook for Red River at Drayton Valid 03-16-2019 through 06-16-2019</p> <p>Percent Chance of reaching or exceeding this level</p> <table border="1"> <tr> <td>46.0 ft</td> <td>5%</td> </tr> <tr> <td>45.7 ft</td> <td>10%</td> </tr> <tr> <td>44.6 ft</td> <td>25%</td> </tr> <tr> <td>43.7 ft</td> <td>50%</td> </tr> <tr> <td>43.0 ft</td> <td>75%</td> </tr> <tr> <td>42.1 ft</td> <td>95%</td> </tr> </table> <p>Recent Crests:</p> <ul style="list-style-type: none"> 39.9 ft - 2013 37.1 ft - 2014 35.6 ft - 2017 23.6 ft - 2015 <p>River Level: 11.9 ft as of 03-14-2019</p> <p><small>*This outlook graphic shows the most likely river stage (stage based on the latest forecast). There is a 5% chance of values higher than depicted here. **RIVER CREATED ON 03-14-2019</small></p>	46.0 ft	5%	45.7 ft	10%	44.6 ft	25%	43.7 ft	50%	43.0 ft	75%	42.1 ft	95%		✓			
46.0 ft	5%																
45.7 ft	10%																
44.6 ft	25%																
43.7 ft	50%																
43.0 ft	75%																
42.1 ft	95%																
<p>Hydrologic Outlook/Thaw Updates</p> <div style="background-color: #0056b3; color: white; padding: 10px;"> <p>Hydrologic Outlook/Thaw Updates</p> <ul style="list-style-type: none"> Monday, March 18th <ul style="list-style-type: none"> Favorable melt conditions to persist Daytime temperatures warming into the 40s and 50s will help ripen the snowpack, but low temperatures dipping back below freezing will keep water from entering the river system No major weather systems expected for the next week Thursday, March 21st <ul style="list-style-type: none"> Favorable melt conditions to persist Temperatures above freezing during the day and below freezing at night will start to create some ponding and water moving into local drainage Full blown river flooding and extensive overland flooding not expected to begin through at least early next week March 15th outlook remains valid as recent temperature and precipitation pattern has been accounted for </div>		✓															

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Flood Warning</p> <p>376 WGUS43 KFGF 271441 FLWFGF BULLETIN - IMMEDIATE BROADCAST REQUESTED Flood Warning National Weather Service Eastern North Dakota/Grand Forks ND 941 AM CDT Wed Mar 27 2019</p> <p>...The National Weather Service in Grand Forks, ND has issued a flood warning (new) for these river locations in Minnesota...North Dakota...</p> <p>new flooding is forecast to occur at... * Wahpeton...on the Red River...in Wilkin and Richland Counties.</p> <p>. A combination of reservoir outflows and localized snowmelt is causing the Wahpeton stage to slowly rise.</p> <p>Forecast temperatures show continued above freezing temperatures over the next 24 hours, followed by cooler temperatures March 29 through 31 More snowmelt is expected today.</p> <p>Below freezing forecast temperatures during March 30-31 should temporarily shut down the melt.</p> <p>A more typical springtime temperature regime, with daytime highs above freezing, and nighttime lows below freezing, is currently forecast for the first week of April. This would result in an ideal slow snowmelt pattern during that time.</p> <p>The current stage is affected by 1 to 2 feet of ice.</p> <p>*** A follow-up flood statement with more detailed flooding information will be issued shortly. ***</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-271541- /O.NEW.KFGF.FL.W.0001.190329T0600Z-190402T1200Z/ /WHNN8.1.SM.190329T0600Z.190330T1200Z.190401T0600Z.NO/ 941 AM CDT Wed Mar 27 2019</p> <p>The National Weather Service in Grand Forks, ND has issued a new Flood Warning for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River * from late Thursday night to Tuesday morning. * At 8:30 AM Wednesday the stage was 10.2 feet. * Minor Flood Stage is 11.0 feet. * For the next 7 days...Minor flooding is forecast. * Forecast...rise above Flood Stage by early Friday morning and continue to rise to near 11.5 feet by Saturday mid-morning. The river will fall below Flood Stage by early Monday morning. <p>&&</p> <p>LAT...LON 4650 9684 4650 9663 4603 9641 4602 9672</p> <p>\$\$</p> <p>HydroTeam FGF</p>					

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful									
<p>Flood statement</p> <p>713 WGSUS83 KFGF 171652 FLSFGF Flood Statement National Weather Service Eastern North Dakota/Grand Forks ND 1152 AM CDT Wed Apr 17 2019</p> <p>...The flood warning is now cancelled for these river locations in Minnesota...</p> <ul style="list-style-type: none"> * Alvarado...on the Snake River...in Marshall County <p>...The flood warning has been extended for these river locations in North Dakota...Minnesota...</p> <ul style="list-style-type: none"> * Hickson...on the Red River...in Cass County * Sabin...on the South Branch Buffalo River...in Clay County * Hawley...on the Buffalo River...in Clay County * Enderlin...on the Maple River...in Cass and Ransom Counties <p>...The flood warning continues for these river locations in Minnesota...North Dakota...</p> <ul style="list-style-type: none"> * Wahpeton...on the Red River ...in Wilkin and Richland Counties * Fargo...on the Red River ...in Clay and Cass Counties * Halstad...on the Red River ...in Norman and Traill Counties * East Grand Forks...on the Red River ...in Polk and Grand Forks Counties * Oslo...on the Red River ...in Marshall...Polk...Grand Forks and Walsh Counties * Drayton...on the Red River ...in Kittson...Marshall...Pembina and Walsh Counties * Pembina...on the Red River ...in Kittson and Pembina Counties * Dilworth...on the Buffalo River ...in Clay County * Twin Valley...on the Wild Rice River (MN) ...in Norman County * Hendrum...on the Wild Rice River (MN) ...in Norman County * Shelly...on the Marsh River ...in Norman County * Climax...on the Sandhill River ...in Polk County * Crookston...on the Red Lake River ...in Polk County * Hallock...on the Two Rivers River ...in Kittson County * Abercrombie...on the Wild Rice River (ND) ...in Richland County * Kindred...on the Sheyenne River ...in Cass and Richland Counties * West Fargo Diversion...on the Sheyenne River ...in Cass County * Harwood...on the Sheyenne River ...in Cass County * Mapleton...on the Maple River ...in Cass County <p>...This forecast is for a 7-day period...the highest stage indicated may not reflect the crest for this event.</p> <p>Forecasts are updated daily and stage values will change as new weather and river information is used.</p> <p>River forecasts use 24 hours of forecast precipitation. However, depending on the situation, they may include precipitation expected through the next 72 hours.</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPs/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-181653- /O.CON.KFGF.FL.W.0901.00000T0000Z-00000T0000Z/ /WHNN8.2.SM.190328T0937Z.190401T1152.00000T0000Z.ND/ 1152 AM CDT Wed Apr 17 2019</p> <p>The Flood Warning continues for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River. * until further notice...or until the warning is cancelled. * At 10:30 AM Wednesday the stage was 12.9 feet. * Minor flooding is occurring and during the next 7 days...Moderate flooding is forecast. * Moderate Flood Stage is 13.0 feet. * The river is forecast to crest at 14.5 (give or take one foot) on Sunday morning. * Reservoir outflows upstream are being lessened by the USACE. * Impact Statement(s) - At 15.0 feet, MAJOR FLOOD. Wahpeton storm sewer outlets and Main Street closed. <p>&&</p> <p>Daily 7am CDT/6am CST forecast stage in feet:</p> <table border="1"> <thead> <tr> <th>Date (month/day)</th> <th>Thu 04/18</th> <th>Fri 04/19</th> <th>Sat 04/20</th> <th>Sun 04/21</th> <th>Mon 04/22</th> <th>Tue 04/23</th> <th>Wed 04/24</th> </tr> </thead> <tbody> <tr> <td>...</td></tr> </tbody> </table> <p>...truncated 784 lines...</p>	Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24	...					
Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24							
...														

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation Report – Map of forecast points</p> <p>National Weather Service Grand Forks, ND Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Map of Flood Forecast Points</p>  <p>Map current as of 11:00 am Wednesday, April 17</p> <p>Check here for the latest river forecasts</p> <p>Message of the Day:</p> <ul style="list-style-type: none"> Initial crest: rising river levels continue on the Red River near and north of Drayton. Secondary crest: secondary rises ongoing due to snowmelt/rainfall. Secondary crests should be lower than first for most locations (except possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks). Overland flooding continues along and near the Red River. <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>		✓			
<p>Situation Report - Impacts</p> <p>National Weather Service Grand Forks, ND Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Potential Impacts:</p> <ul style="list-style-type: none"> Snow melt from last week's winter storm continues to cause secondary rises in rivers and tributaries. This snowmelt and ongoing rainfall will also serve to lengthen duration of high water. <ul style="list-style-type: none"> Secondary crest not expected to be higher than previous crest for most locations, with the exception of possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks. Several roads (including I-29) continue to be impacted due to overland and river flooding, especially near the Red River. Backwater is still affecting many locations on the tributaries while few ice impacts remain. Continue to pay attention to closures and notices from local authorities. <p>River Basins Potentially Impacted:</p> <ul style="list-style-type: none"> Initial flood crest: <ul style="list-style-type: none"> The Red River at Drayton is nearing crest while levels continue to rise at Pembina. Secondary flood crest: <ul style="list-style-type: none"> Most locations across the southern portion of the basin are beginning their secondary rise. Backwater from the main stem Red River will continue to keep water levels high, especially between Fargo/Moorhead and the international border. <p>How to Monitor River Levels and Forecasts:</p> <ul style="list-style-type: none"> NWS River Observation/Forecast Page NWS Grand Forks Flood Briefing Page <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>		✓			

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																	
<p>Situation Report – Temp and Precip Outlook</p> <p> National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p style="background-color: yellow; text-align: center;">Moderate-Major Flooding Continues</p> <p style="text-align: center;">Temperature Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Highs</th> <th>Lows (Overnight)</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>48-51</td> <td>35-38</td> </tr> <tr> <td>Thursday, April 18</td> <td>52-56</td> <td>31-34</td> </tr> <tr> <td>Friday, April 19</td> <td>59-65</td> <td>41-46</td> </tr> <tr> <td>Saturday, April 20</td> <td>56-66</td> <td>35-40</td> </tr> <tr> <td>Sunday, April 21</td> <td>52-57</td> <td>31-36</td> </tr> <tr> <td>Monday, April 22</td> <td>50-57</td> <td>32-37</td> </tr> </tbody> </table> <p style="text-align: center;">Precipitation Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Type</th> <th>Liquid Amounts</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>Rain and Snow</td> <td>0"-0.50"</td> <td>Mainly southern RRV</td> </tr> <tr> <td>Thursday, April 18</td> <td>Showers/Thunder</td> <td>0"-0.10"</td> <td>Eastern ND/NW MN</td> </tr> <tr> <td>Friday, April 19</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Saturday, April 20</td> <td>Showers</td> <td>0"-0.20"</td> <td>Along/north Hwy 2</td> </tr> <tr> <td>Sunday, April 21</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Monday, April 22</td> <td>None</td> <td>0"</td> <td></td> </tr> </tbody> </table> <p>Click for a description of this product Click to evaluate this product</p>	Day of the Week	Highs	Lows (Overnight)	Wednesday, April 17	48-51	35-38	Thursday, April 18	52-56	31-34	Friday, April 19	59-65	41-46	Saturday, April 20	56-66	35-40	Sunday, April 21	52-57	31-36	Monday, April 22	50-57	32-37	Day of the Week	Type	Liquid Amounts	Location	Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV	Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN	Friday, April 19	None	0"		Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2	Sunday, April 21	None	0"		Monday, April 22	None	0"		✓				
Day of the Week	Highs	Lows (Overnight)																																																				
Wednesday, April 17	48-51	35-38																																																				
Thursday, April 18	52-56	31-34																																																				
Friday, April 19	59-65	41-46																																																				
Saturday, April 20	56-66	35-40																																																				
Sunday, April 21	52-57	31-36																																																				
Monday, April 22	50-57	32-37																																																				
Day of the Week	Type	Liquid Amounts	Location																																																			
Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV																																																			
Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN																																																			
Friday, April 19	None	0"																																																				
Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2																																																			
Sunday, April 21	None	0"																																																				
Monday, April 22	None	0"																																																				
<p>Situation report – 24 hour precipitation</p> <p> National Weather Service Grand Forks, ND</p> <p style="text-align: right;">Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p style="background-color: yellow; text-align: center;">Moderate-Major Flooding Continues</p> <div style="display: flex; flex-direction: column; align-items: flex-start;"> <div style="margin-bottom: 20px;"> <p>Precipitation over the last 24 hours in the River Forecasts (7 am Tue to 7 am Wed)</p>  </div> <div> <p>24 hour forecast precipitation in the River Forecasts (7 am Wed to 7 am Thu)</p>  </div> </div> <p>Click for a description of this product Click to evaluate this product</p>				✓																																																		

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation report – Message of the Day</p>  <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Message of the Day: Widespread river flooding and localized overland flooding continues. Red River continues to rise near and north of Drayton while southern portions of the valley are seeing re-rises due to snowmelt and ongoing rainfall.</p>   <p>Water on Demers Ave near the Sorlie Bridge in East Grand Forks MN on 4/12/19. Photo courtesy of Carl Jones.</p> <p>Quick facts you should know about flooding:</p> <ul style="list-style-type: none"> Flooding can be caused by heavy rain, rapid snow melt, ice jamming, levee overtopping, dam failure, or from wastewater systems. It only takes 6 inches of fast-moving water to knock you off your feet. A car can be moved in as little as 2 feet of water. 90% of all U.S. natural disasters declared by the President involve flooding. <p>Preparedness:</p> <p>Know your risk: Are you in a flood-prone area? Know your zone: www.fema.gov/flood-zones</p> <ul style="list-style-type: none"> You must purchase separate flood insurance for your home. There is a 30 day wait period between when you buy a flood insurance policy and when it goes into effect. Plan ahead! A Flood Watch is issued when conditions are favorable for flooding. Time to prepare! A Flood Warning is issued when flooding is imminent or occurring. Time to act! <p>Never drive into flood waters! Turn around, don't drown!</p> <p>Find out more information on our web page: www.weather.gov/fot/ Follow us on Facebook and Twitter for more up to date information:  @NWSGrandForks  @NWSGrandForks</p> <p>Building a Weather-Ready Nation</p> <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>			✓		

7. What changes might you recommend for any of the products shown?

explain how to read things or make them
easier

8. Which media would you use to find NWS information about the risk of flooding near you? Please circle all that apply:

Facebook Twitter Internet

Other: NWS warnings or radio
 or TV

9. Which digital platform are you most likely to use to access NWS resources? Circle one.

Smartphone Tablet Laptop Desktop Other: _____

10. Was anything in the session confusing? Yes No

If Yes, please explain:

11. What improvements could be made in the format or content of this session?

None

12. Additional comments:

Thank you.

Thank you for participating!

Survey Questions - Post-Focus Group Session Survey

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0690-0030. Without this approval, we could not conduct this post-focus group survey collection. Public reporting for this information collection is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Nurture Nature Center at: 518 Northampton Street, Easton, PA 18042, Attn: Rachel Hogan Carr, Executive Director, rhogan@nurturenature.org.

1. Please rate your agreement with the following statements about the forum.

Please check ONE box for each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The information was clearly presented.		✓			
I felt comfortable voicing my opinion.	✓				
I know more about the National Weather Service (NWS) resources.			✓		
I feel I could use NWS resources to judge my risk in an extreme weather event.	✓				

2. What are the biggest barriers you face in using NWS flood forecast and warning products? Some examples to consider are lack of computer or phone, lack of internet access, language barriers, NWS products too difficult to understand, or other factors.

Some information is extremely dense (ly) packed into a webpage.

3. Our goal today was to gather feedback to improve NWS flood forecast and warning tools. Beyond the questions asked today, what else would be important to know about how you gather/would use NWS information about extreme weather risks and your intended actions?

Localized information

4. After attending today's session, how likely are you to:

Please check ONE box for each statement.

	Very Likely	Somewhat Likely	Neither likely nor unlikely	Somewhat Unlikely	Unlikely
Create or revise plans to deal with extreme weather events using NWS products.	<input checked="" type="checkbox"/>				
Share what I learned about NWS products today with others.		<input checked="" type="checkbox"/>			
Seek NWS information about extreme weather risks.	<input checked="" type="checkbox"/>				
Use NWS products and information in your decision-making	<input checked="" type="checkbox"/>				

5. Do you prefer text-based or graphical/visual NWS products in trying to understand your level of risk from flooding? Circle one.

Text

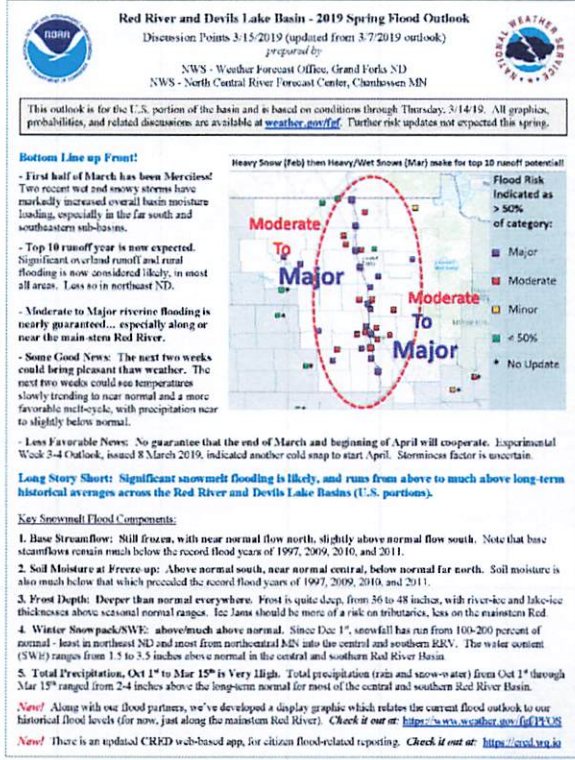
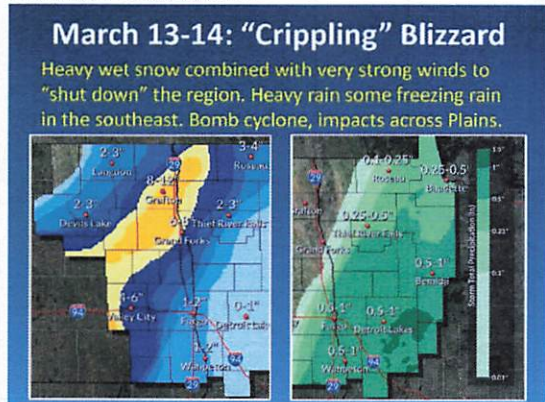
Graphics

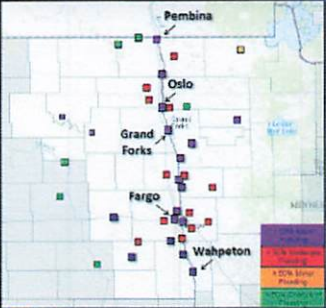
Combined text and graphics

Please explain.

I enjoy more pages vs densely packed pages of information

6. Please rate the weather products discussed today based on their usefulness to you in assessing your flood situation.

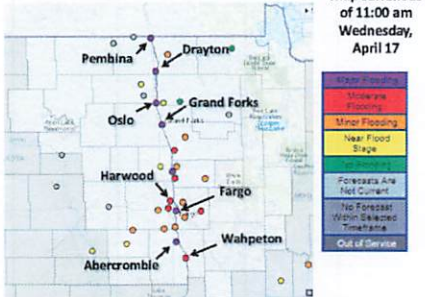
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Spring Flood Outlook</p>  <p>Red River and Devils Lake Basin - 2019 Spring Flood Outlook Discussion Points 3/15/2019 (updated from 3/7/2019 outlook) prepared by: NWS - Weather Forecast Office, Grand Forks ND NWS - North Central River Forecast Center, Chanhassen MN</p> <p>This outlook is for the U.S. portion of the basin and is based on conditions through Thursday, 3/14/19. All graphics, probabilities, and related discussions are available at weather.gov/ffr. Further risk updates not expected this spring.</p> <p>Bottom Line up Front!</p> <ul style="list-style-type: none"> - First half of March has been Merciless! Two recent wet and snowy storms have markedly increased overall basin moisture loading, especially in the far south and southeastern sub-basins. - Top 10 runoff year is now expected. Significant overland runoff and rural flooding is now considered likely, in most all areas. Less so in northeast ND. - Moderate to Major riverine flooding is nearly guaranteed... especially along or near the main stem Red River. - Some Good News: The next two weeks could bring pleasant thaw weather. The next two weeks could see temperatures slowly trending to near normal and a more favorable melt-cycle, with precipitations near to slightly below normal. - Less Favorable News: No guarantee that the end of March and beginning of April will cooperate. Experimental Week 3-4 Outlook, issued 8 March 2019, indicated another cold snap to start April. Storminess factor is uncertain. <p>Long Story Short: Significant snowmelt flooding is likely, and runs from a above to much above long-term historical averages across the Red River and Devils Lake Basins (U.S. portions).</p> <p>Key Snowmelt Flood Components:</p> <ol style="list-style-type: none"> 1. Base Streamflow: Still frozen, with near normal flow north, slightly above normal flow south. Note that base streamflows remain much below the record flood years of 1997, 2009, 2010, and 2011. 2. Soil Moisture at Freeze up: Above normal south, near normal central, below normal far north. Soil moisture is also much below that which preceded the record flood years of 1997, 2009, 2010, and 2011. 3. Frost Depth: Deeper than normal everywhere. Frost is quite deep, from 36 to 48 inches, with river-ice and lake-ice thicknesses above seasonal normal ranges. Ice jams should be more of a risk on tributaries, less on the mainstem Red. 4. Winter Snowpack/SWE: above/much above normal. Since Dec 1st, snowfall has run from 100-200 percent of normal - least in northeast ND and most from north-central MN into the central and southern RRV. The water content (SWE) ranges from 1.5 to 3.5 inches above normal in the central and southern Red River Basin. 5. Total Precipitation, Oct 1st to Mar 15th is Very High. Total precipitation (rain and snow-water) from Oct 1st through Mar 15th ranged from 2-4 inches above the long-term normal for most of the central and southern Red River Basin. <p>New! Along with our flood partners, we've developed a display graphic which relates the current flood outlook to our historical flood levels (for now, just along the mainstem Red River). Check it out at: https://www.weather.gov/ffr/FY19</p> <p>New! There is an updated CRED web-based app, for citizen flood-related reporting. Check it out at: https://cred.mn.gov</p>					
<p>Snow/rain Forecasts</p>  <p>March 13-14: "Crippling" Blizzard Heavy wet snow combined with very strong winds to "shut down" the region. Heavy rain some freezing rain in the southeast. Bomb cyclone, impacts across Plains.</p>					

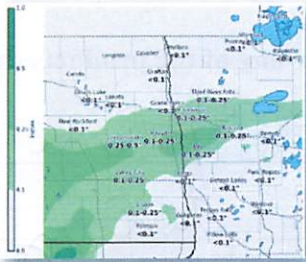
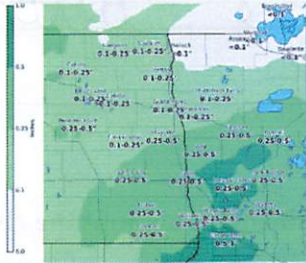
	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																																																																																																																																																																																																																																																																																
<p>Long range probabilistic outlook</p> <p>DEVILS LAKE & STUMP LAKE. (last updated) <small>Long Range Probabilistic Outlook Valid March 4, 2015 - September 29, 2015</small></p> <table border="1"> <tr> <td>LOCATION</td> <td>954</td> <td>994</td> <td>934</td> <td>904</td> <td>298</td> <td>101</td> <td>034</td> </tr> <tr> <td>MINUS SWE</td> <td>1442.1</td> <td>1419.7</td> <td>1434.2</td> <td>1419.4</td> <td>1453.2</td> <td>1420.7</td> <td>1451.4</td> </tr> <tr> <td>MAX STUMP LAKE</td> <td>1442.1</td> <td>1449.2</td> <td>1447.9</td> <td>1443.0</td> <td>1453.0</td> <td>1451.1</td> <td>1451.4</td> </tr> </table> <p>The current water level of Devils Lake and Stump Lake are +1450.2 ft. MSL.</p> <p>Color code: Below Normal, Minor, Moderate, Major, Flood of Record</p> <p>RED RIVER AND TRIBUTARIES. <small>Long Range Probabilistic Outlook Valid March 14, 2015 - June 15, 2015</small></p> <table border="1"> <tr> <td>LOCATION</td> <td>954</td> <td>902</td> <td>754</td> <td>503</td> <td>254</td> <td>103</td> <td>054</td> </tr> <tr> <td>MOONSTAR</td> <td>13.9</td> <td>14.1</td> <td>14.8</td> <td>15.7</td> <td>17.0</td> <td>16.2</td> <td>19.0</td> </tr> <tr> <td>MOONSTAR</td> <td>32.1</td> <td>32.8</td> <td>33.9</td> <td>35.1</td> <td>36.1</td> <td>37.6</td> <td>39.6</td> </tr> <tr> <td>PARAN</td> <td>33.0</td> <td>34.9</td> <td>36.5</td> <td>37.9</td> <td>38.9</td> <td>40.3</td> <td>42.4</td> </tr> <tr> <td>KALITAC</td> <td>39.0</td> <td>39.5</td> <td>39.0</td> <td>38.5</td> <td>40.0</td> <td>40.5</td> <td>42.2</td> </tr> <tr> <td>CLARK FORKS</td> <td>45.8</td> <td>47.0</td> <td>49.0</td> <td>50.6</td> <td>52.7</td> <td>54.6</td> <td>56.7</td> </tr> <tr> <td>OSLO</td> <td>37.2</td> <td>37.9</td> <td>37.8</td> <td>37.9</td> <td>38.0</td> <td>38.1</td> <td>38.1</td> </tr> <tr> <td>OSLO</td> <td>41.8</td> <td>42.4</td> <td>43.0</td> <td>43.7</td> <td>44.6</td> <td>45.3</td> <td>46.0</td> </tr> <tr> <td>FARGO</td> <td>51.0</td> <td>51.9</td> <td>52.2</td> <td>53.0</td> <td>53.7</td> <td>54.6</td> <td>55.7</td> </tr> </table> <p>Minnesota Tributaries:</p> <table border="1"> <tr> <td>Location</td> <td>20.2</td> <td>15.0</td> <td>15.8</td> <td>17.2</td> <td>19.6</td> <td>20.3</td> <td>22.7</td> </tr> <tr> <td>WILD RICE</td> <td>9.5</td> <td>9.8</td> <td>10.0</td> <td>10.4</td> <td>11.2</td> <td>11.9</td> <td>13.0</td> </tr> <tr> <td>WILD RICE</td> <td>21.2</td> <td>21.9</td> <td>22.7</td> <td>23.9</td> <td>25.1</td> <td>26.7</td> <td>29.1</td> </tr> <tr> <td>WILD RICE</td> <td>19.9</td> <td>22.0</td> <td>22.8</td> <td>23.9</td> <td>25.6</td> <td>27.1</td> <td>30.0</td> </tr> <tr> <td>WILD RICE</td> <td>31.6</td> <td>32.0</td> <td>32.6</td> <td>33.3</td> <td>34.0</td> <td>35.0</td> <td>35.6</td> </tr> <tr> <td>WILD RICE</td> <td>17.0</td> <td>18.0</td> <td>20.3</td> <td>22.0</td> <td>23.9</td> <td>24.7</td> <td>25.7</td> </tr> <tr> <td>WILD RICE</td> <td>26.6</td> <td>27.9</td> <td>29.4</td> <td>31.2</td> <td>34.4</td> <td>37.0</td> <td>39.1</td> </tr> <tr> <td>WILD RICE</td> <td>13.4</td> <td>13.7</td> <td>13.1</td> <td>13.3</td> <td>13.5</td> <td>13.6</td> <td>13.7</td> </tr> <tr> <td>WILD RICE</td> <td>31.6</td> <td>32.6</td> <td>34.3</td> <td>36.9</td> <td>38.5</td> <td>39.4</td> <td>42.9</td> </tr> <tr> <td>WILD RICE</td> <td>65.0</td> <td>65.7</td> <td>65.7</td> <td>66.4</td> <td>68.3</td> <td>72.0</td> <td>73.1</td> </tr> <tr> <td>WILD RICE</td> <td>104.5</td> <td>105.0</td> <td>106.1</td> <td>109.0</td> <td>109.1</td> <td>110.3</td> <td>113.9</td> </tr> <tr> <td>WILD RICE</td> <td>807.4</td> <td>807.7</td> <td>808.4</td> <td>809.5</td> <td>809.9</td> <td>811.5</td> <td>812.0</td> </tr> <tr> <td>WILD RICE</td> <td>14.1</td> <td>14.0</td> <td>13.8</td> <td>13.4</td> <td>13.7</td> <td>13.8</td> <td>13.4</td> </tr> </table> <p>North Dakota Tributaries:</p> <table border="1"> <tr> <td>Location</td> <td>20.0</td> <td>21.9</td> <td>23.4</td> <td>24.9</td> <td>26.6</td> <td>26.9</td> <td>27.5</td> </tr> <tr> <td>WILD RICE</td> <td>13.9</td> <td>15.0</td> <td>16.6</td> <td>18.0</td> <td>19.8</td> <td>21.7</td> <td>22.7</td> </tr> <tr> <td>WILD RICE</td> <td>15.6</td> <td>16.1</td> <td>16.3</td> <td>20.5</td> <td>22.4</td> <td>23.0</td> <td>28.2</td> </tr> <tr> <td>WILD RICE</td> <td>20.2</td> <td>20.8</td> <td>21.1</td> <td>21.2</td> <td>21.3</td> <td>21.2</td> <td>21.2</td> </tr> <tr> <td>WILD RICE</td> <td>21.2</td> <td>21.2</td> <td>21.3</td> <td>21.3</td> <td>21.3</td> <td>21.3</td> <td>21.3</td> </tr> <tr> <td>WILD RICE</td> <td>91.5</td> <td>91.9</td> <td>92.1</td> <td>92.1</td> <td>92.2</td> <td>92.3</td> <td>92.4</td> </tr> <tr> <td>WILD RICE</td> <td>13.8</td> <td>13.1</td> <td>12.8</td> <td>13.3</td> <td>13.6</td> <td>14.4</td> <td>15.0</td> </tr> <tr> <td>WILD RICE</td> <td>22.0</td> <td>23.2</td> <td>22.5</td> <td>22.8</td> <td>23.2</td> <td>24.0</td> <td>24.1</td> </tr> <tr> <td>WILD RICE</td> <td>6.1</td> <td>6.8</td> <td>10.1</td> <td>13.3</td> <td>14.6</td> <td>16.5</td> <td>17.9</td> </tr> <tr> <td>WILD RICE</td> <td>7.3</td> <td>7.8</td> <td>8.0</td> <td>8.5</td> <td>9.4</td> <td>9.9</td> <td>10.2</td> </tr> <tr> <td>WILD RICE</td> <td>6.5</td> <td>7.0</td> <td>10.3</td> <td>14.3</td> <td>16.1</td> <td>17.9</td> <td>19.4</td> </tr> <tr> <td>WILD RICE</td> <td>4.5</td> <td>4.7</td> <td>4.9</td> <td>5.4</td> <td>5.7</td> <td>5.9</td> <td>6.2</td> </tr> <tr> <td>WILD RICE</td> <td>1.3</td> <td>1.0</td> <td>1.7</td> <td>1.0</td> <td>1.0</td> <td>2.0</td> <td>2.1</td> </tr> </table> <p>Notes:</p> <ol style="list-style-type: none"> Devils Lake Basin Runoff Risk has not changed much since February. A somewhat above normal rise is expected, from 1 to 2 ft. No update since 7 Mar 2015. Devils Lake is currently about 1.5 feet lower than this time last year. Red River Basin Runoff Risk has jumped markedly. All Red River main stem points will see significantly higher flows, - due to significant snow/SWE loads from 9 Mar and 14 Mar storms, over damp and deep frozen antecedent conditions, especially in the far southern Red River Basin, south of Fargo; - coupled with much increased runoff potential from the MN tributaries, and Red Lake River Basin. Snowpack/SWE and runoff potential has increased in most all MN tributaries. Central and South tribs have seen the highest increase in snow and SWE this past week, including the Red Lake River. Roseau River Basin now has a slight increase to just above normal for runoff risk. ND Wild Rice has a quite High Runoff Risk, with much above normal snowpack. Mid to Lower Sheyenne has gained appreciably in snow and SWE. High Red River levels lead to sig. backwater at Harwood. Some snow/SWE increases on Maple and Rush Rivers as well. Slight increase on Park River, else northeast ND saw least overall gains in SWE. 	LOCATION	954	994	934	904	298	101	034	MINUS SWE	1442.1	1419.7	1434.2	1419.4	1453.2	1420.7	1451.4	MAX STUMP LAKE	1442.1	1449.2	1447.9	1443.0	1453.0	1451.1	1451.4	LOCATION	954	902	754	503	254	103	054	MOONSTAR	13.9	14.1	14.8	15.7	17.0	16.2	19.0	MOONSTAR	32.1	32.8	33.9	35.1	36.1	37.6	39.6	PARAN	33.0	34.9	36.5	37.9	38.9	40.3	42.4	KALITAC	39.0	39.5	39.0	38.5	40.0	40.5	42.2	CLARK FORKS	45.8	47.0	49.0	50.6	52.7	54.6	56.7	OSLO	37.2	37.9	37.8	37.9	38.0	38.1	38.1	OSLO	41.8	42.4	43.0	43.7	44.6	45.3	46.0	FARGO	51.0	51.9	52.2	53.0	53.7	54.6	55.7	Location	20.2	15.0	15.8	17.2	19.6	20.3	22.7	WILD RICE	9.5	9.8	10.0	10.4	11.2	11.9	13.0	WILD RICE	21.2	21.9	22.7	23.9	25.1	26.7	29.1	WILD RICE	19.9	22.0	22.8	23.9	25.6	27.1	30.0	WILD RICE	31.6	32.0	32.6	33.3	34.0	35.0	35.6	WILD RICE	17.0	18.0	20.3	22.0	23.9	24.7	25.7	WILD RICE	26.6	27.9	29.4	31.2	34.4	37.0	39.1	WILD RICE	13.4	13.7	13.1	13.3	13.5	13.6	13.7	WILD RICE	31.6	32.6	34.3	36.9	38.5	39.4	42.9	WILD RICE	65.0	65.7	65.7	66.4	68.3	72.0	73.1	WILD RICE	104.5	105.0	106.1	109.0	109.1	110.3	113.9	WILD RICE	807.4	807.7	808.4	809.5	809.9	811.5	812.0	WILD RICE	14.1	14.0	13.8	13.4	13.7	13.8	13.4	Location	20.0	21.9	23.4	24.9	26.6	26.9	27.5	WILD RICE	13.9	15.0	16.6	18.0	19.8	21.7	22.7	WILD RICE	15.6	16.1	16.3	20.5	22.4	23.0	28.2	WILD RICE	20.2	20.8	21.1	21.2	21.3	21.2	21.2	WILD RICE	21.2	21.2	21.3	21.3	21.3	21.3	21.3	WILD RICE	91.5	91.9	92.1	92.1	92.2	92.3	92.4	WILD RICE	13.8	13.1	12.8	13.3	13.6	14.4	15.0	WILD RICE	22.0	23.2	22.5	22.8	23.2	24.0	24.1	WILD RICE	6.1	6.8	10.1	13.3	14.6	16.5	17.9	WILD RICE	7.3	7.8	8.0	8.5	9.4	9.9	10.2	WILD RICE	6.5	7.0	10.3	14.3	16.1	17.9	19.4	WILD RICE	4.5	4.7	4.9	5.4	5.7	5.9	6.2	WILD RICE	1.3	1.0	1.7	1.0	1.0	2.0	2.1					
LOCATION	954	994	934	904	298	101	034																																																																																																																																																																																																																																																																																																														
MINUS SWE	1442.1	1419.7	1434.2	1419.4	1453.2	1420.7	1451.4																																																																																																																																																																																																																																																																																																														
MAX STUMP LAKE	1442.1	1449.2	1447.9	1443.0	1453.0	1451.1	1451.4																																																																																																																																																																																																																																																																																																														
LOCATION	954	902	754	503	254	103	054																																																																																																																																																																																																																																																																																																														
MOONSTAR	13.9	14.1	14.8	15.7	17.0	16.2	19.0																																																																																																																																																																																																																																																																																																														
MOONSTAR	32.1	32.8	33.9	35.1	36.1	37.6	39.6																																																																																																																																																																																																																																																																																																														
PARAN	33.0	34.9	36.5	37.9	38.9	40.3	42.4																																																																																																																																																																																																																																																																																																														
KALITAC	39.0	39.5	39.0	38.5	40.0	40.5	42.2																																																																																																																																																																																																																																																																																																														
CLARK FORKS	45.8	47.0	49.0	50.6	52.7	54.6	56.7																																																																																																																																																																																																																																																																																																														
OSLO	37.2	37.9	37.8	37.9	38.0	38.1	38.1																																																																																																																																																																																																																																																																																																														
OSLO	41.8	42.4	43.0	43.7	44.6	45.3	46.0																																																																																																																																																																																																																																																																																																														
FARGO	51.0	51.9	52.2	53.0	53.7	54.6	55.7																																																																																																																																																																																																																																																																																																														
Location	20.2	15.0	15.8	17.2	19.6	20.3	22.7																																																																																																																																																																																																																																																																																																														
WILD RICE	9.5	9.8	10.0	10.4	11.2	11.9	13.0																																																																																																																																																																																																																																																																																																														
WILD RICE	21.2	21.9	22.7	23.9	25.1	26.7	29.1																																																																																																																																																																																																																																																																																																														
WILD RICE	19.9	22.0	22.8	23.9	25.6	27.1	30.0																																																																																																																																																																																																																																																																																																														
WILD RICE	31.6	32.0	32.6	33.3	34.0	35.0	35.6																																																																																																																																																																																																																																																																																																														
WILD RICE	17.0	18.0	20.3	22.0	23.9	24.7	25.7																																																																																																																																																																																																																																																																																																														
WILD RICE	26.6	27.9	29.4	31.2	34.4	37.0	39.1																																																																																																																																																																																																																																																																																																														
WILD RICE	13.4	13.7	13.1	13.3	13.5	13.6	13.7																																																																																																																																																																																																																																																																																																														
WILD RICE	31.6	32.6	34.3	36.9	38.5	39.4	42.9																																																																																																																																																																																																																																																																																																														
WILD RICE	65.0	65.7	65.7	66.4	68.3	72.0	73.1																																																																																																																																																																																																																																																																																																														
WILD RICE	104.5	105.0	106.1	109.0	109.1	110.3	113.9																																																																																																																																																																																																																																																																																																														
WILD RICE	807.4	807.7	808.4	809.5	809.9	811.5	812.0																																																																																																																																																																																																																																																																																																														
WILD RICE	14.1	14.0	13.8	13.4	13.7	13.8	13.4																																																																																																																																																																																																																																																																																																														
Location	20.0	21.9	23.4	24.9	26.6	26.9	27.5																																																																																																																																																																																																																																																																																																														
WILD RICE	13.9	15.0	16.6	18.0	19.8	21.7	22.7																																																																																																																																																																																																																																																																																																														
WILD RICE	15.6	16.1	16.3	20.5	22.4	23.0	28.2																																																																																																																																																																																																																																																																																																														
WILD RICE	20.2	20.8	21.1	21.2	21.3	21.2	21.2																																																																																																																																																																																																																																																																																																														
WILD RICE	21.2	21.2	21.3	21.3	21.3	21.3	21.3																																																																																																																																																																																																																																																																																																														
WILD RICE	91.5	91.9	92.1	92.1	92.2	92.3	92.4																																																																																																																																																																																																																																																																																																														
WILD RICE	13.8	13.1	12.8	13.3	13.6	14.4	15.0																																																																																																																																																																																																																																																																																																														
WILD RICE	22.0	23.2	22.5	22.8	23.2	24.0	24.1																																																																																																																																																																																																																																																																																																														
WILD RICE	6.1	6.8	10.1	13.3	14.6	16.5	17.9																																																																																																																																																																																																																																																																																																														
WILD RICE	7.3	7.8	8.0	8.5	9.4	9.9	10.2																																																																																																																																																																																																																																																																																																														
WILD RICE	6.5	7.0	10.3	14.3	16.1	17.9	19.4																																																																																																																																																																																																																																																																																																														
WILD RICE	4.5	4.7	4.9	5.4	5.7	5.9	6.2																																																																																																																																																																																																																																																																																																														
WILD RICE	1.3	1.0	1.7	1.0	1.0	2.0	2.1																																																																																																																																																																																																																																																																																																														
<p>Flood risk</p> <p>2019 Spring Flood Outlook <small>Weather Fore of OROF Grand Forks, ND Issued March 19, 2019 11:43AM CDT</small></p>  <p>Significant Snowmelt Flooding Expected</p> <ul style="list-style-type: none"> The threat for significant snowmelt flooding continues to be above normal throughout the Red River Basin Major flooding is expected along the mainstem Red River with moderate to major flooding on the tributaries Future temperatures and precipitation (snow + rain) will have a big impact on flood potential The later the snowmelt gets, the more the risk for rapid and/or rainfall enhances runoff increases Stay tuned for updated information as we get closer to the spring melt 																																																																																																																																																																																																																																																																																																																					





	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Percent chance of exceedance</p> <p>2019 Spring Flood Outlook for Red River at Drayton Valid 03-18-2019 through 06-16-2019</p> <p>% Chance of reaching or exceeding this level</p> <p>River Level: 11.9 ft as of 03-14-2019</p> <p><small>*This outlook graphic shows the most likely river stage range based on the latest forecast. There is a 5% chance of values higher than depicted here. *Graphic created on 03-14-2019</small></p>		X			
<p>Hydrologic Outlook/Thaw Updates</p> <p>Hydrologic Outlook/Thaw Updates</p> <ul style="list-style-type: none"> Monday, March 18th <ul style="list-style-type: none"> Favorable melt conditions to persist Daytime temperatures warming into the 40s and 50s will help ripen the snowpack, but low temperatures dipping back below freezing will keep water from entering the river system No major weather systems expected for the next week Thursday, March 21st <ul style="list-style-type: none"> Favorable melt conditions to persist Temperatures above freezing during the day and below freezing at night will start to create some ponding and water moving into local drainage Full blown river flooding and extensive overland flooding not expected to begin through at least early next week March 15th outlook remains valid as recent temperature and precipitation pattern has been accounted for 		X			

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Flood Warning 376 WGUS43 KFGF 271441 FLWFGF BULLETIN - IMMEDIATE BROADCAST REQUESTED Flood Warning National Weather Service Eastern North Dakota/Grand Forks ND 941 AM CDT Wed Mar 27 2019</p> <p>...The National Weather Service in Grand Forks, ND has issued a flood warning (new) for these river locations in Minnesota...North Dakota...</p> <p>new flooding is forecast to occur at... * Wahpeton...on the Red River...in Wilkin and Richland Counties.</p> <p>. A combination of reservoir outflows and localized snowmelt is causing the Wahpeton stage to slowly rise.</p> <p>Forecast temperatures show continued above freezing temperatures over the next 24 hours, followed by cooler temperatures March 29 through 31 More snowmelt is expected today.</p> <p>Below freezing forecast temperatures during March 30-31 should temporarily shut down the melt.</p> <p>A more typical springtime temperature regime, with daytime highs above freezing, and nighttime lows below freezing, is currently forecast for the first week of April. This would result in an ideal slow snowmelt pattern during that time.</p> <p>The current stage is affected by 1 to 2 feet of ice.</p> <p>*** A follow-up flood statement with more detailed flooding information will be issued shortly. ***</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPS/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC077-271541- /O.NEW.KFGF.FL.W.0001.190329T0600Z.190402T1200Z/ /WHNN8.1.SM.190329T0600Z.190330T1200Z.190401T0600Z.NO/ 941 AM CDT Wed Mar 27 2019</p> <p>The National Weather Service in Grand Forks, ND has issued a new Flood warning for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River * from late Thursday night to Tuesday morning. * At 8:30 AM Wednesday the stage was 10.2 feet. * Minor Flood Stage is 11.0 feet. * For the next 7 days...Minor flooding is forecast. * Forecast...rise above Flood Stage by early Friday morning and continue to rise to near 11.5 feet by Saturday mid-morning. The river will fall below Flood Stage by early Monday morning. <p>&&</p> <p>LAT...LON 4650 9684 4650 9663 4603 9641 4602 9672</p> <p>\$\$</p> <p>HydroTeam FGF</p>			X		

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful									
<p>Flood statement</p> <p>713 WGUS83 KFGF 171652 FLSFGF Flood Statement National Weather Service Eastern North Dakota/Grand Forks ND 1152 AM CDT Wed Apr 17 2019</p> <p>...The flood warning is now cancelled for these river locations in Minnesota...</p> <ul style="list-style-type: none"> * Alvarado...on the Snake River...in Marshall County <p>...The flood warning has been extended for these river locations in North Dakota...Minnesota...</p> <ul style="list-style-type: none"> * Hickson...on the Red River...in Cass County * Sabin...on the South Branch Buffalo River...in Clay County * Hawley...on the Buffalo River...in Clay County * Enderlin...on the Maple River...in Cass and Ransom Counties <p>...The flood warning continues for these river locations in Minnesota...North Dakota...</p> <ul style="list-style-type: none"> * Wahpeton...on the Red River ...in Wilkin and Richland Counties * Fargo...on the Red River ...in Clay and Cass Counties * Halstad...on the Red River ...in Norman and Traill Counties * East Grand Forks...on the Red River ...in Polk and Grand Forks Counties * Oslo...on the Red River ...in Marshall...Polk...Grand Forks and Walsh Counties * Drayton...on the Red River ...in Kittson...Marshall...Pembina and Walsh Counties * Pembina...on the Red River ...in Kittson and Pembina Counties * Dilworth...on the Buffalo River ...in Clay County * Twin Valley...on the Wild Rice River (MN) ...in Norman County * Hendrum...on the Wild Rice River (MN) ...in Norman County * Shelly...on the Marsh River ...in Norman County * Climax...on the Sandhill River ...in Polk County * Crookston...on the Red Lake River ...in Polk County * Hallock...on the Two Rivers River ...in Kittson County * Abercrombie...on the Wild Rice River (ND) ...in Richland County * Kindred...on the Sheyenne River ...in Cass and Richland Counties * West Fargo Diversion...on the Sheyenne River ...in Cass County * Harwood...on the Sheyenne River ...in Cass County * Mapleton...on the Maple River ...in Cass County <p>...This forecast is for a 7-day period...the highest stage indicated may not reflect the crest for this event.</p> <p>Forecasts are updated daily and stage values will change as new weather and river information is used.</p> <p>River forecasts use 24 hours of forecast precipitation. However, depending on the situation, they may include precipitation expected through the next 72 hours.</p> <p>PRECAUTIONARY/PREPAREDNESS ACTIONS...</p> <p>Safety message...turn around, don't drown...</p> <ul style="list-style-type: none"> - Don't travel through flooded areas! - Persons in the warned area need to take steps to protect life and property. If necessary, move to a higher and safer location. - Persons living in the Red River Basin should monitor river levels while the river is in, or near, flood. <p>For more information...go to the AHPs/River section on our web page at: www.weather.gov/grandforks</p> <p>&&</p> <p>MNC167-NDC977-181653- /O.CON.KFGF.FL.W.0001.000000T0000Z-000000T0000Z/ /WHNNB.2.SM.190328T0937Z.190401T1115Z.000000T0000Z.NO/ 1152 AM CDT Wed Apr 17 2019</p> <p>The Flood Warning continues for...</p> <ul style="list-style-type: none"> * ...Wahpeton...on the Red River. * until further notice...or until the warning is cancelled. * At 10:30 AM wednesday the stage was 12.9 feet. * Minor flooding is occurring and during the next 7 days...Moderate flooding is forecast. * Moderate Flood Stage is 13.0 feet. * The river is forecast to crest at 14.5 (give or take one foot) on Sunday morning. * Reservoir outflows upstream are being lessened by the USACE. * Impact Statement(s) - At 15.0 feet, MAJOR FLOOD. Wahpeton storm sewer outlets and Main Street closed. <p>&&</p> <p>Daily 7am CDT/6am CST forecast stage in feet:</p> <table border="1"> <thead> <tr> <th>Date (month/day)</th> <th>Thu 04/18</th> <th>Fri 04/19</th> <th>Sat 04/20</th> <th>Sun 04/21</th> <th>Mon 04/22</th> <th>Tue 04/23</th> <th>Wed 04/24</th> </tr> </thead> <tbody> <tr> <td>...</td></tr> </tbody> </table> <p>...truncated 784 lines...</p>	Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24	...				X	
Date (month/day)	Thu 04/18	Fri 04/19	Sat 04/20	Sun 04/21	Mon 04/22	Tue 04/23	Wed 04/24							
...														

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation Report – Map of forecast points</p> <p>National Weather Service Grand Forks, ND Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Map of Flood Forecast Points</p>  <p>Map current as of 11:00 am Wednesday, April 17</p> <p>Check here for the latest river forecasts</p> <p>Message of the Day:</p> <ul style="list-style-type: none"> Initial crest: rising river levels continue on the Red River near and north of Drayton. Secondary crest: secondary rises ongoing due to snowmelt/rainfall. Secondary crests should be lower than first for most locations (except possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks). Overland flooding continues along and near the Red River. <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>		X			
<p>Situation Report - Impacts</p> <p>National Weather Service Grand Forks, ND Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Potential Impacts:</p> <ul style="list-style-type: none"> Snow melt from last week's winter storm continues to cause secondary rises in rivers and tributaries. This snowmelt and ongoing rainfall will also serve to lengthen duration of high water. <ul style="list-style-type: none"> Secondary crest not expected to be higher than previous crest for most locations, with the exception of possibly Wahpeton/Breckenridge and Grand Forks/East Grand Forks. Several roads (including I-29) continue to be impacted due to overland and river flooding, especially near the Red River. Backwater is still affecting many locations on the tributaries while few ice impacts remain. Continue to pay attention to closures and notices from local authorities. <p>River Basins Potentially Impacted:</p> <ul style="list-style-type: none"> Initial flood crest: <ul style="list-style-type: none"> The Red River at Drayton is nearing crest while levels continue to rise at Pembina. Secondary flood crest: <ul style="list-style-type: none"> Most locations across the southern portion of the basin are beginning their secondary rise. Backwater from the main stem Red River will continue to keep water levels high, especially between Fargo/Moorhead and the international border. <p>How to Monitor River Levels and Forecasts:</p> <ul style="list-style-type: none"> NWS River Observation/Forecast Page NWS Grand Forks Flood Briefing Page <p><small>Click for a description of this product</small> <small>Click to evaluate this product</small></p>		X			

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful																																																	
<p>Situation Report – Temp and Precip Outlook</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Temperature Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Highs</th> <th>Lows (Overnight)</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>48-51</td> <td>35-38</td> </tr> <tr> <td>Thursday, April 18</td> <td>52-56</td> <td>31-34</td> </tr> <tr> <td>Friday, April 19</td> <td>59-65</td> <td>41-46</td> </tr> <tr> <td>Saturday, April 20</td> <td>56-66</td> <td>35-40</td> </tr> <tr> <td>Sunday, April 21</td> <td>52-57</td> <td>31-36</td> </tr> <tr> <td>Monday, April 22</td> <td>50-57</td> <td>32-37</td> </tr> </tbody> </table> <p>Precipitation Outlook</p> <table border="1"> <thead> <tr> <th>Day of the Week</th> <th>Type</th> <th>Liquid Amounts</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Wednesday, April 17</td> <td>Rain and Snow</td> <td>0"-0.50"</td> <td>Mainly southern RRV</td> </tr> <tr> <td>Thursday, April 18</td> <td>Showers/Thunder</td> <td>0"-0.10"</td> <td>Eastern ND/NW MN</td> </tr> <tr> <td>Friday, April 19</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Saturday, April 20</td> <td>Showers</td> <td>0"-0.20"</td> <td>Along/north Hwy 2</td> </tr> <tr> <td>Sunday, April 21</td> <td>None</td> <td>0"</td> <td></td> </tr> <tr> <td>Monday, April 22</td> <td>None</td> <td>0"</td> <td></td> </tr> </tbody> </table> <p>Click for a description of this product Click to evaluate this product</p>	Day of the Week	Highs	Lows (Overnight)	Wednesday, April 17	48-51	35-38	Thursday, April 18	52-56	31-34	Friday, April 19	59-65	41-46	Saturday, April 20	56-66	35-40	Sunday, April 21	52-57	31-36	Monday, April 22	50-57	32-37	Day of the Week	Type	Liquid Amounts	Location	Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV	Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN	Friday, April 19	None	0"		Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2	Sunday, April 21	None	0"		Monday, April 22	None	0"			X			
Day of the Week	Highs	Lows (Overnight)																																																				
Wednesday, April 17	48-51	35-38																																																				
Thursday, April 18	52-56	31-34																																																				
Friday, April 19	59-65	41-46																																																				
Saturday, April 20	56-66	35-40																																																				
Sunday, April 21	52-57	31-36																																																				
Monday, April 22	50-57	32-37																																																				
Day of the Week	Type	Liquid Amounts	Location																																																			
Wednesday, April 17	Rain and Snow	0"-0.50"	Mainly southern RRV																																																			
Thursday, April 18	Showers/Thunder	0"-0.10"	Eastern ND/NW MN																																																			
Friday, April 19	None	0"																																																				
Saturday, April 20	Showers	0"-0.20"	Along/north Hwy 2																																																			
Sunday, April 21	None	0"																																																				
Monday, April 22	None	0"																																																				
<p>Situation report – 24 hour precipitation</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Moderate-Major Flooding Continues</p> <p>Precipitation over the last 24 hours in the River Forecasts (7 am Tue to 7 am Wed)</p>  <p>24 hour forecast precipitation in the River Forecasts (7 am Wed to 7 am Thu)</p>  <p>Click for a description of this product Click to evaluate this product</p>			X																																																			

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
<p>Situation report – Message of the Day</p> <p>National Weather Service Grand Forks, ND</p> <p>Situation Report Wednesday, April 17, 2019 11:12 AM</p> <p>Message of the Day: Widespread river flooding and localized overland flooding continues. Red River continues to rise near and north of Drayton while southern portions of the valley are seeing re-rises due to snowmelt and ongoing rainfall.</p>   <p>Water on Demers Ave near the Sorlie Bridge in East Grand Forks MN on 4/12/19. Photo courtesy of Carl Jones.</p> <p>Quick facts you should know about flooding:</p> <ul style="list-style-type: none"> Flooding can be caused by heavy rain, rapid snow melt, ice jamming, levee overtopping, dam failure, or from wastewater systems. It only takes 6 inches of fast-moving water to knock you off your feet. A car can be moved in as little as 2 feet of water. 50% of all U.S. natural disasters declared by the President involve flooding. <p>Preparedness:</p> <p>Know your risk: Are you in a flood-prone area? Know your zone: www.fema.gov/flood-zones</p> <ul style="list-style-type: none"> You must purchase separate flood insurance for your home. There is a 30 day wait period between when you buy a flood insurance policy and when it goes into effect. Plan ahead! A Flood Watch is issued when conditions are favorable for flooding. Time to prepare! A Flood Warning is issued when flooding is imminent or occurring. Time to act! <p>Never drive into flood waters! Turn around, don't drown!</p> <p>Find out more information on our web page: www.weather.gov/fgt/</p> <p>Follow us on Facebook and Twitter for more up to date information:  @NWSGrandForks  @NWSGrandForks</p> <p>Building a Weather-Ready Nation</p> <p>Click for a description of this product Click to evaluate this product</p>		X			

7. What changes might you recommend for any of the products shown?

Highlight the date / time of
 so it is easier to identify. Ex.
 because users are often on mobile
 devices

8. Which media would you use to find NWS information about the risk of flooding near you? Please circle all that apply:

Facebook Twitter Internet Other: _____

9. Which digital platform are you most likely to use to access NWS resources? Circle one.

Smartphone

Tablet

Laptop

Desktop

Other: _____

10. Was anything in the session confusing? Yes

No

If Yes, please explain:

11. What improvements could be made in the format or content of this session?

Great job ladies!

12. Additional comments:

Thank you for participating!